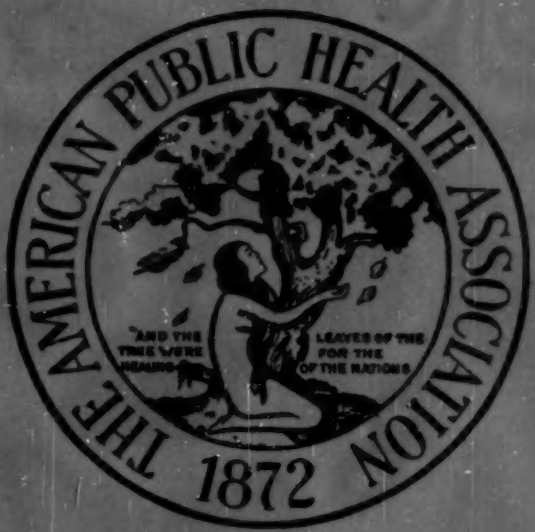
American Journal of

PUBLIC HEALTH

and The Nation's Health



ANNUAL INDEX

DECEMBER, 1955

volume 45

number 12

On Guard . . . *to bring milk to the public at its best!*

#5 OF A SERIES

America's milk supply is protected by the world's highest standards of sanitation as it travels on its long journey from the grazing field to the home. Much of this milk reaches its destination in Canco containers. Here is the fifth of a series which outlines in brief the story of Canco containers and the role they play in bringing milk to the public at its best.

Frequent rinse tests in accordance with standard methods for the examination of dairy products are made at Canco factories to keep a continuing check on compliance with the Public Health Code. Photo shows Canco technician transferring rinse solution from containers to sterile Petri dishes.

After incubation for 48 hours in the Petri dishes, the rinse solution is ready for inspection. In the photograph above, a Canco technician is shown using the Quebec colony counter to take note of the number of incubated bacterial colonies, if any, in each dish. The findings are described below.

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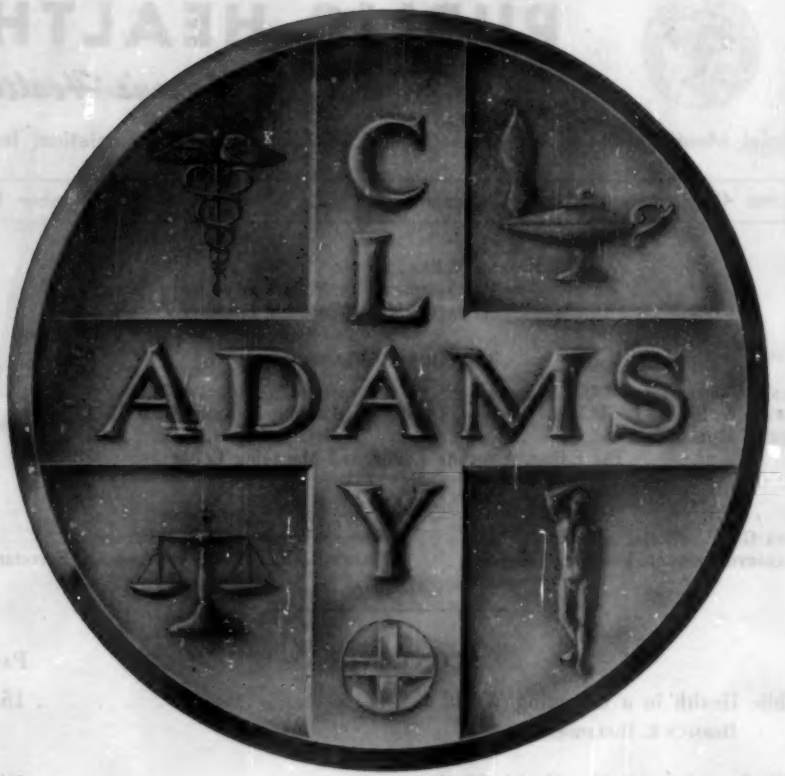

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PUBLIC HEALTH

and the Nation's Health

Official Monthly Publication of the American Public Health Association, Inc.

Volume 45 | December, 1955 | Number 12

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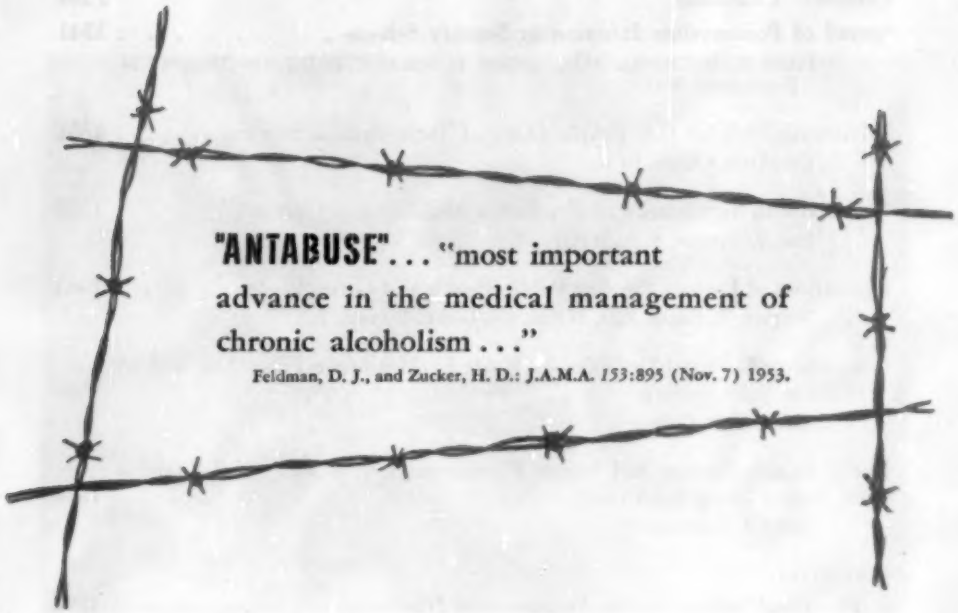
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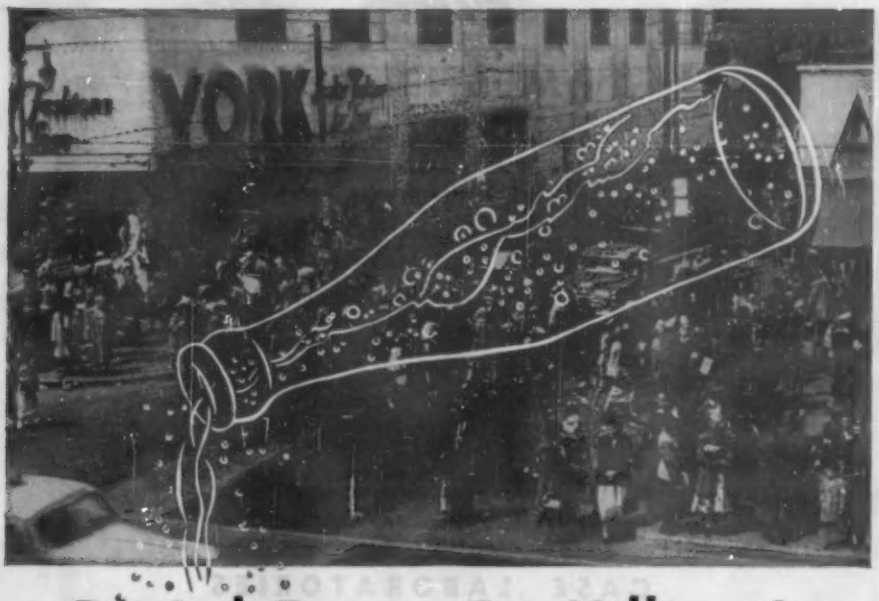

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[1] Antibiotics & Chemotherapy, Vol. IV, No. 9, Sept, 1954
[2] Antibiotics & Chemotherapy, Vol. II, 30, 1952
[3] Antibiotics & Chemotherapy, Vol. III, 409, 1953
[4] Nebraska M.J., 37:251, 1952.

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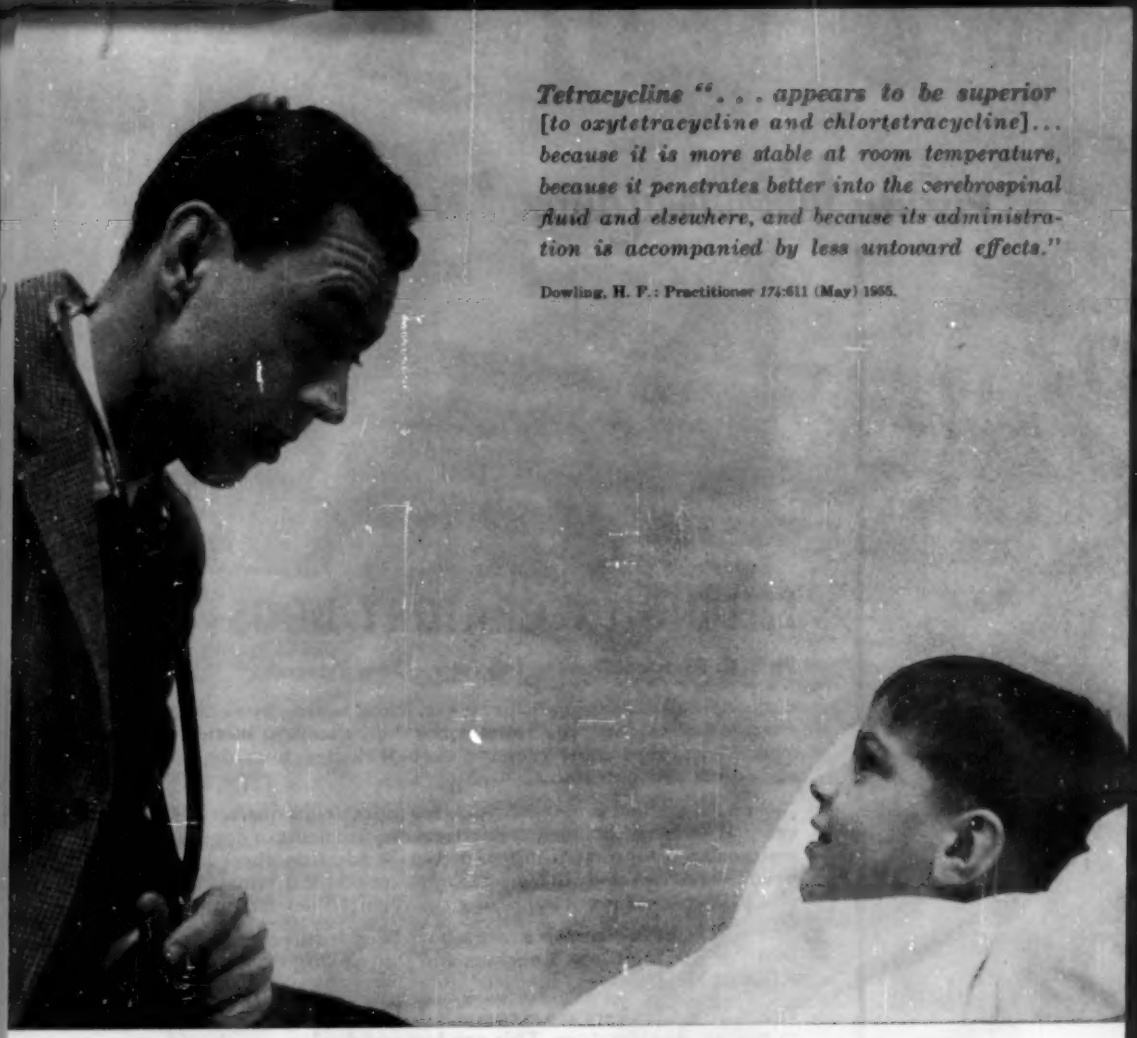

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Dowling, H. F.: Practitioner 174:611 (May) 1955.

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By H. C. Schaefer, Director, Laboratory Chow Research

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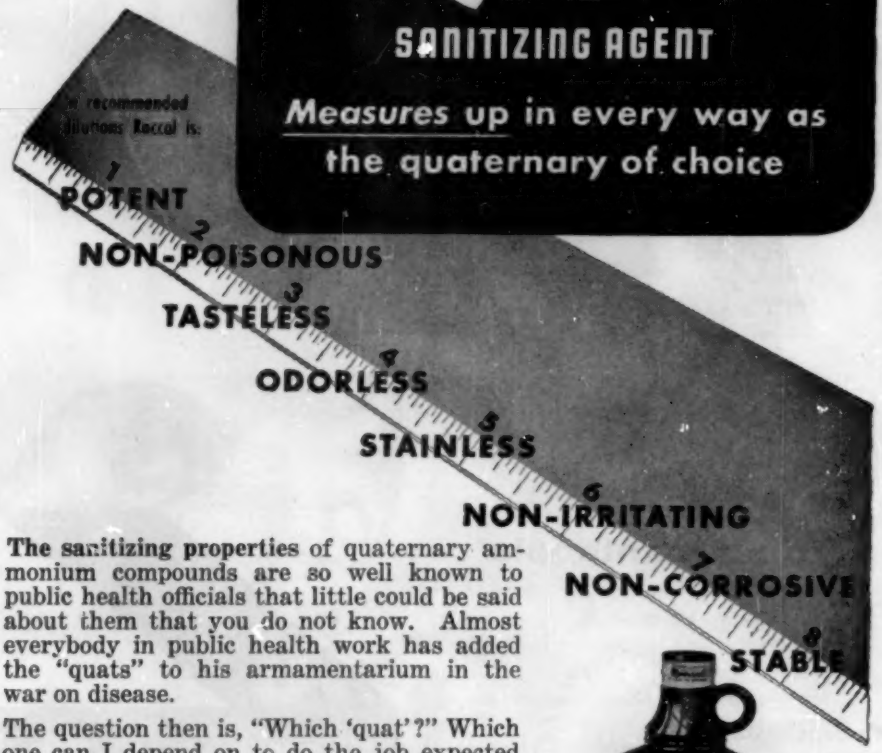

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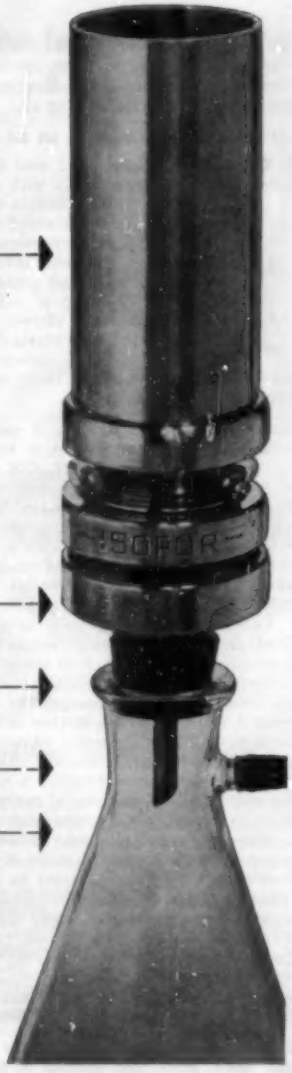

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INSIDE SCIENCE

The Vital Story of VITAMIN A

by Science Writer

We live in a golden age of the sciences!

In the science of nutrition discoveries of food elements and their action have resulted in the promise of better health for us all.

Let's consider vitamin A as an example.

A Capsule History. 1913 was the year. Two teams working independently with animal feeding experiments discovered that a diet which was good in all other respects but which varied only in the source of fat caused young animals to thrive or sicken as the fat was varied. The work of these teams (McCollum and Davis; Osborne and Mendel) led to the discovery of the food factor which we know as vitamin A.

Composition and Action. A pale yellow, oil-soluble substance, vitamin A is expressed in the chemist's shorthand as $C_{20}H_{29}OH$. It is necessary in the diets of men and animals to promote the body's growth and development. Vitamin A is a vital requirement in guarding the health of the eyes and skin, and for resistance against infection. It helps maintain the health of mucous membranes and other specialized epithelial and glandular tissues.

Vitamin A enters the body as a constituent of food. Or it may be created within the body when a precursor of vitamin A is eaten. A precursor is a food element with potential vitamin A *value* but no actual vitamin A *content*. For instance, many green leaves have a high vitamin A value but, paradoxically, contain no actual vitamin A. The body converts the precursor into the vitamin. The most common precursor of vitamin A is beta carotene, the natural yellow coloring of many foods, such as dairy products, cereal grains, carrots, alfalfa, etc.

When consumed in food vitamin A is absorbed primarily in the healthy intestine, is esterified in the intestine's walls and is carried as an ester in the lymph and blood to the body's storage depots. The liver, which has a large capacity for storage, contains about 90% of the vitamin A found in the body.

Isolation and Synthesis. It was not until 1937 that pure, crystalline vitamin A was isolated by Holmes and Corbett from fish-liver oil. Research in the synthesis of vitamin A was stimulated during the Second World War by the threat to natural sources in fish-liver oil. This work resulted in several processes to produce vitamin A synthetically. Of these, one of the most successful was evolved by the Roche research team headed by Dr. Otto Isler which was announced in 1947. Much of the vitamin A now used for pharmaceutical manufacturing and food fortification in the United States and many other countries of the world is produced by this process.

Vitamin A and beta carotene produced by the Hoffmann-La Roche synthesis have many positive advantages for food and pharmaceutical manufacturers. Among these are the complete absence of any "fishy" odor, taste, or after-taste; the reasonable and stable price; their stability, purity and uniformity and the assurance of a steady economical supply.

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1. Smith, C. A., and others: Am. J. Syph., Gonor. & Ven. Dis. 38:136 (March) 1954. 2. Council on Pharmacy and Chemistry: New and Nonofficial Remedies. J. B. Lippincott Co., Philadelphia, 1954, p. 148.

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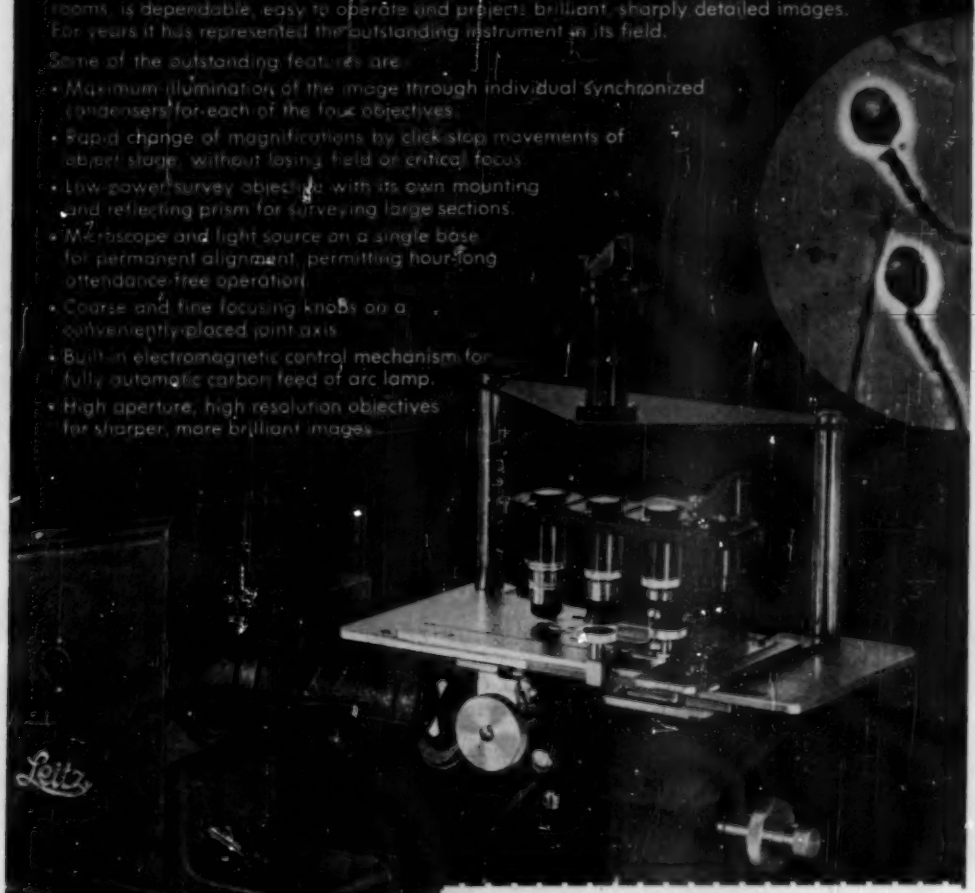

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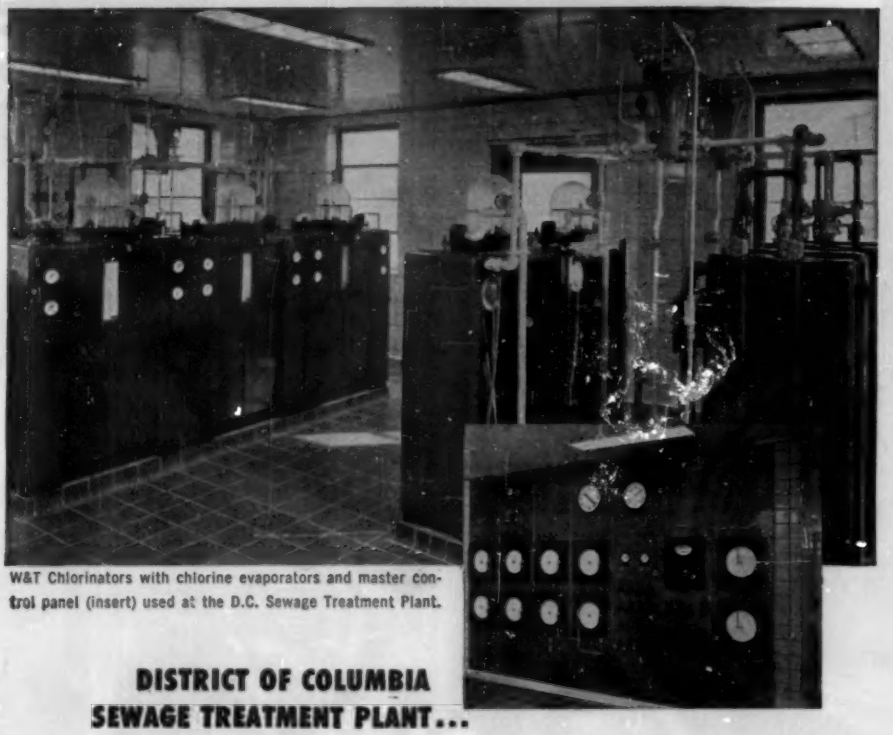

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Public Health in a Changing World

HERMAN E. HILLEBOE, M.D., F.A.P.H.A.

The President of the American Public Health Association lucidly presents four dynamic challenges to the public health professions of today.

Among the many public health problems to which I might address myself on this important occasion there are four that try to the utmost the knowledge, skill, insight, and imagination of the public health and allied professions. I refer, in particular, to the manifold challenges of the chronic diseases, to the profound difficulties that characterize mental and emotional disorders, the pressing demands for medical rehabilitation, and the urgent need for evaluation of programs directed toward meeting these and other public health needs. All of these problems cannot be explored fully at this time, but I will try to present the salient points that merit our attention. Our future success depends upon our collective ability to adapt to current demands and also upon the realism of our analyses and evaluation of the whole structure of public health activities.

Chronic Diseases

Solving the historic problems of public health has created many new and complex problems. In preserving life from the ravages of the acute communicable diseases, public health and medicine have helped man to live longer. But in living longer man now is beset with the chronic diseases and the disabilities of middle and old age.

The twentieth century brought immunization against such diseases as smallpox, diphtheria, tetanus, and later against plague, cholera, yellow fever, and typhus. Immunization of persons against these dread diseases is today a common and accepted procedure. The latest advance in this field is, of course, the Salk vaccine against paralytic poliomyelitis. Experience with this new immunizing agent has demonstrated its effectiveness in preventing the paralytic

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Presidential address to the American Public Health Association at the first General Session of the Eighty-Third Annual Meeting in Kansas City, Mo., November 15, 1955.

form of the disease. For example, preliminary experience in New York State among two-thirds of a million children, 6–10 years of age, showed that five times more paralytic poliomyelitis occurred among unvaccinated children than among the vaccinated during the polio season of June through October, 1955. We still have much to learn about dosage, type, number and interval of injections, and duration of effectiveness. However, from our extensive experience in New York State we have full confidence in the safety and potency of the Salk vaccine as it is manufactured and tested today.

Of significance to our discussion on public health in a changing world is the fact that in the United States in 1900 an estimated 133,000 persons died from communicable diseases, while in 1953, the latest report available, there were only 9,000 such deaths. These diseases no longer constitute our main causes of death; one result is that more children live to become adults.

With the threat of communicable disease among children minimized the pendulum swings to the chronic diseases and disabilities especially among older persons. The increase in life expectancy offers benefits to the individual but at the same time it adds social and economic burdens to the community and the state. We must prepare now to meet the special public health problems of this group of people.

A health program for older people cannot start at age 60, or 65, or 70; it must begin during early adult life at the time that chronic diseases begin to attack the mature body. A sound program directed against the chronic diseases of adult life is truly preventive geriatrics.[1] As the work capacity begins to dwindle in middle age and later years, health resources must be measured and remaining vitality conserved.

The major causes of death in the United States today are the chronic diseases, especially diseases of the heart, cancer, and cerebral vascular lesions. For example, in an effort to counteract the ill-effects of heart disease state health departments are broadening and strengthening their control programs. In our state we have cooperated with the Albany Medical College in establishing a heart program in which male state employees between the ages of 40 and 55—those most susceptible to coronary disease—are regularly examined at a Cardiovascular Health Center. Some 2,000 employees have been examined annually since 1953 with a number of valuable results.

What is the purpose of such a project? First of all, it gives a preventive service to state employees; but equally important, it is a research effort to learn how best to detect heart disease at an early stage and to develop new methods of effective and economical screening to find cardiac disease. We hope to gain basic knowledge of the preventive aspects of coronary artery disease and hypertension. We use this research project for the teaching of medical students and also for postgraduate education of general practitioners and health officers in the area. This is the type of project which should be a vital part of larger health departments, so that they may better meet the challenge of this crucial public health problem.

So it is with cancer. In the United States today more than half of the cases occur in persons past the age of 60. Unfortunately, we know little about the cause or causes of cancer. Yet there are many useful things we can do until etiology is determined. However, our approach to this problem is similar to our attack on heart disease—early detection, adequate medical care, rehabilitation, and research into all three phases of control. The New York State Health Department has taken an important step in combating this disease with the addi-

tion of facilities to the Roswell Park Memorial Institute, the state's cancer research center at Buffalo. The increased facilities include a new 500-bed research hospital with its associated laboratories and animal farms. Here, outstanding scientists from many nations are given the opportunity to seek new knowledge of the causes and treatment of cancer.

Our state has recognized its official responsibility in combating this disease by appropriating over five million dollars annually for the operation of this research institute. If the wealthier states accept such responsibility for the protection of the public's health, our goal should be reached that much sooner. Again, as we apply new knowledge of cancer we lengthen the life of affected individuals and further magnify the magnitude of the problems of chronic disease and especially rehabilitation.

The vascular lesions affecting the central nervous system, which so often result in lingering disability, constitute the third major killer in the United States. As a challenge to physical medicine and psychiatry these lesions rank high among the chronic diseases. This affliction leaves many persons partially paralyzed, some of them permanently. It also creates an additional problem for mental hospitals. Many of the patients in such hospitals are there because of the mental and physical complications of cerebral vascular lesions.

When we go on to consider other chronic ailments—arthritis, neuromuscular disorders and diabetes—we find that rehabilitation plays a predominant role in the prevention of their progression. Because of the high prevalence of these conditions and their tendencies to be prolonged, the basic elements of early detection and adequate medical care must be complemented by medical rehabilitation programs so that sufferers may learn to live with their handicaps. Research must be carried forward to give us better tools with which to work in all three of these activities.

In the acute communicable infections we strive to prevent occurrence of disease. In the chronic diseases, however, pathology is usually already present, so our job is mainly prevention of progression; in so doing we alleviate suffering and avoid premature death. There are many excellent examples of chronic disease programs throughout the country. Just to mention a few, there is the broad program of the California State Health Department, the multiple screening activities in Virginia, and the pilot studies on atherosclerosis and nutrition in Minnesota. What we need are more of these programs in every state and territory.

Mental Health

Mental disorders constitute the greatest single cause of disability and illness among people in America today. The problem is a growing one and requires all the resources that the community can allocate to its solution.

It has been estimated that about 25 per cent of the nation's labor force suffers from some form of emotional disturbance. This situation and its attendant dislocations, in terms of wages paid for no productive results and in terms of damage to men and machines, cost industry and labor billions of dollars annually. Every year a quarter of a million new patients enter mental institutions. Our mental health experts tell us that one out of every 12 persons will sometime during his life become a mental hospital patient and that in the United States today there are some 10,000,000 persons suffering from mental illnesses or disorders. Personnel and facilities fall far short of the demands of these unfortunate people who are swelling the ranks of the chronically ill.

It must be squarely faced that the organized public health movement has not done nearly enough to help solve the tremendous problems of mental disease in this country. Close and continuing collaboration of public health and mental health authorities in this nation is an urgent necessity. The two are complementary and never should be competitive, as too often, regrettably, they are. It is wasteful of both money and men to travel two parallel roads to the same objective; the soundest health possible, both mental and physical.

It will not be enough to go on thinking solely in terms of curative measures in the attack on mental disease. All the principles and skills of preventive medicine must be brought to bear on this task.

It is a source of deep satisfaction to know that the American Public Health Association has established a mental health section within its organizational structure. In the future, as I see it, the broad field of mental health will increasingly absorb our attention and demand our action. We cannot delay giving our full contribution and still claim that we are responsive to the needs of the public's health.

Medical Rehabilitation

A realistic discussion of the chronic diseases and the problems of mental health leads us inevitably to a consideration of medical rehabilitation. People stricken in their most productive and mature years must learn to live and work with their disabilities. Medical rehabilitation should start as soon as the diagnosis is made, continue on, in varying degrees, during treatment, and follow through as long as the patient can profit from such services. In some individuals this may be for the rest of their lives. Rehabilitation has taken a place of equal importance with diagnosis and treatment in the medical care of persons with chronic disease and disability.

The need for medical rehabilitation is well exemplified in tuberculosis. This disease that is virtually disappearing as a cause of death among persons under 24 is increasing as a cause of illness and disability among persons over 45. At the turn of the century tuberculosis was predominantly an acute infectious process, but in recent years with the use of new drugs and modern surgery it has become a full-fledged member of the chronic disease group. Persons with tuberculosis, even though the disease is arrested, must be on guard for the remainder of their lives to avoid recurrence. Medical rehabilitation may well spell the difference between success and failure in the continued well-being of the tuberculous individual.

Public health physicians need to have an appreciation of the important part played by family doctors in this field. Public health workers can serve best by supplementing and enhancing the work of the family physician. Medical rehabilitation, viewed in this broad perspective, is a synthesis of the skills of the family physician and the public health worker each of whom contributes to the common goal of correcting or retarding the ill-effects of disease and disability. This teamwork promotes optimum health for the community through preventive services to its individual citizens.

Medical rehabilitation of the physically and mentally handicapped calls upon every field of activity in health, vocational service, and welfare. Not only must the many different needs of the disabled individual be met adequately, but the overlapping services require meticulous synchronization. Teamwork of the highest order is necessary from the beginning to the end of the rehabilitative process. Immediately

after the medical members of the team diagnose disability and make a plan of treatment the educational members bring in their vocational guidance and training. The welfare team members also are concerned from the start with the social problems of the individual and the associated problems in the home in which the disabled lives.

The same pattern of teamwork is needed among the several departments in state government concerned with medical rehabilitation. The rigidity of antiquated laws and the barriers of traditional practices too often stand in the way of realignment of duties and responsibilities to meet the present-day needs of the disabled. A new approach is essential if we are to apply the skills and new knowledge that modern science has given us.

By administrative agreement, executive order, or appropriate legislation, health departments can take the lead in all medical aspects of adult rehabilitation programs. This can be done within the requirements set forth in the federal vocational rehabilitation act of 1954 to the mutual benefit of everyone concerned.

For public health workers to direct and advise on the medical aspects of rehabilitation in no way interferes with the prerogatives of the guidance counsellors, educators, and technicians in the vocational aspects of rehabilitation. Nor does it interfere with the employment experts in the departments of labor or education in the placement programs. Interdepartmental planning can solve these problems of relationship if the departmental representatives will only learn to communicate with one another, share burdens, and divide their responsibilities.

Every state could benefit from an interdepartmental council covering the field of human resources to make full use of available personnel and facilities in medical rehabilitation. Here is a productive enterprise in which public health workers can take the initiative in those states that do not have such interdepartmental councils.

Leadership on the part of the public health profession can and must overcome the obstacles of traditional practice and rigid regulations in the provision of medical rehabilitation services, if we are to meet the increasing demands of the present day and the future. We have had a large and satisfying experience in caring for handicapped children; we can provide similar benefits to disabled adults.

For public health to accept new responsibilities and to extend existing ones in our efforts to conserve human resources, it is essential to have a high caliber of general public health services available in the community.

This leads us to the question of how to bring high quality public health services to local communities. The fundamental approach is to establish full-time health departments in communities that are now without them and that have the population and needs to warrant them.

To develop new health departments there must be public health leadership and initiative to gain the acceptance and support of responsible citizens in the community. The American Public Health Association and the National Health Council have devised plans to help you bring new departments into being. It is difficult but it can be accomplished.

It was reported early in 1955 that there were full-time health departments in all major cities of the nation and about 1,300 organized local health units serving 2,218 counties. This means that 80 per cent of the total population of the United States has full-time health departments available for service. The figure of 80 per cent shows accomplishment, but it still means that one-fifth of our nation does not have the benefit

of such a health department's leadership.

The future success of local health departments throughout the nation may well depend upon the programs developed to serve citizens with chronic diseases, especially in the field of medical rehabilitation. Indeed, in planning to meet the future health needs of the nation, let us not forget that a large share of general medical care consists of medical rehabilitation.

There is considerable variation in the quality of local health departments, their financial resources and personnel, as well as the content of their programs. Some critical self-appraisal is in order to seek out the weak spots and to correct remediable deficiencies.

Program Evaluation

This brings us to the subject of program evaluation in public health. Scientific methods of evaluation are being employed successfully in industry and other large-scale activities where the skills of social scientists and management experts have application. Many of these technics and those of modern business administration are adaptable to public health work. Business management is coming of age in many of our state and local health departments.

Let us face the fact that a number of states find it difficult to obtain sufficient tax moneys to support their expanding programs. The increased demands of the people for more service and research create terrific competition among state departments for the same dollar of revenue.

In addition to the financial reasons for program evaluation, it is plain good sense to discard activities that are no longer productive or essential. Money for new programs comes easier on a transfer basis than from new sources. Tradition is not reason enough to maintain an unproductive public health enterprise of low priority.

In program evaluation it is no longer sufficient to have outside experts visit a health department, examine the records, talk to the program directors, and write a narrative report patterned after previous surveys in areas of similar size and location. This became strikingly apparent at the First National Conference on Program Evaluation held at the Michigan School of Public Health in September, 1955. The American Public Health Association was proud to be one of the sponsors of this pioneering effort.

More than one hundred leaders in public health exchanged ideas and examined evaluation technics in use in various parts of the country and in actual programs concerned with accidents, cancer, fluoridation, prematurity, and tuberculosis. In each group discussion basic assumptions were set forth. Next, hypotheses were developed. Then data were examined and analyzed to test these hypotheses. This was real evaluation in a scientific sense.

The need became apparent at this conference for clear definitions of the terms used in discussing program planning, operation, and evaluation. One person would talk about goals, another about purposes, and still another about objectives. Then we discussed functions, procedures, and activities to achieve objectives and agreed that there was disagreement in definition. These differences of opinion are capable of resolution which can be accomplished before the next proposed annual evaluation meeting.

Program evaluation requires the same meticulous skills and methodology that the epidemiologist employs in the study of an acute or chronic disease. It demands intellectual curiosity on the part of the evaluators. It is not enough to make measurements; what is necessary is measurement of results. Technics that have reliability and validity, if expertly used, can produce meaningful results.

It is clearly evident also that public health workers do not have enough precise tools of measurement for most public health activities. So one of our tasks for the immediate future is the development of new patterns of evaluation in a variety of fields of public health. While we are developing new technics of evaluation we can use the ones we have more wisely and with greater skill.

Our colleagues in the voluntary health agencies might also profit by taking stock of their program plans and operations. Together we could determine how best to use our combined resources to meet changing public health needs. The voluntary health agencies with their flexibility in the use of funds and personnel could give tremendous impetus to the development and use of new evaluation technics.

We in the American Public Health Association have much to offer and much to gain in helping to solve problems in program evaluation and chronic disease. To this end, the American Public Health Association is sponsoring under its Committee on Administrative Practice a study in the field of chronic illness. Its purpose is to discover what is now being done by official and nonofficial health agencies to meet problems of chronic illness and disability on a community-wide basis. Evaluation technics are being examined and new ones developed for the use of public health workers who want to improve their programs. Certainly this can be a valuable project—one which can contribute significantly to the advance of public health in the United States.

Summary and Conclusion

It is abundantly clear that our public health problems of the future will be concentrated in older persons, among whom chronic disease and disability are increasingly prevalent. The social and economic overtones of chronic disease and disability have an impact on almost every family. Our public health programs must encompass the degenerative diseases and the long-term illnesses. We cannot delay longer or we will be hopelessly overwhelmed by the sheer weight of the burden.

This does not mean that we can relax our guard against communicable diseases, nor lessen our campaign to reduce infant and maternal mortality, nor slacken our final crusade to conquer tuberculosis. Environmental sanitation is as important as ever and requires constant vigilance to keep the air, water, and food free from pollutants, including those spawned by atomic fission. Nor can we relieve ourselves of the costly burden of medical defense against atomic, biologic, and chemical forms of potential aggression. However, it does mean that we have some shrewd planning to do, if we are to meet the demands of the future as we have met those of the past.

During this Annual Meeting experts from many disciplines in the social and medical sciences, from government and from private life, have expressed their views and predictions on the challenging question—where are we going in public health? The subject is of vital concern to all of us and was wisely chosen by the program committee to be the theme of our Annual Meeting. During the coming months the American Public Health Association will use all of its media of communication, the Journal, the Newsletter, meetings of regional groups, state societies, and expert committees to bring the challenge of public health in a changing world to health workers everywhere. I know that you will accept these challenges each in your own way and respond with every resource at your command to help solve our pressing problems.

It was my privilege a few weeks ago to participate in a conference in which

national leaders from many walks of life, including medicine, discussed the interdependence of their work and their religion. In listening to these men and women and in discussing ways and means of bringing religion and work closer together, I was reminded again and again of the dedication of the vast majority of public health workers. Dedicated people are in the habit of making whatever sacrifices life demands of them. There can be no question that you have made sacrifices in the past, but your sacrifices will be even greater in the future. I am certain you can face the future unafraid because you have demonstrated that you possess the spiritual courage to meet its problems. By so doing you will share in the freedom and the blessings of a world made healthier and happier by your efforts. This is indeed a time for a rededication for all of us who are in public health.

I have tried to point out a few paths into the future and to set a compass that will assist us to determine where we are going in public health. The chronic diseases, mental disorders, medical rehabilitation, and the consequent need to evaluate and reevaluate all public health programs constitute, it seems to me, urgent challenges to our profession. We cannot do less than to face these challenges with resolution and daring. The courage to do what is necessary is as basic to the character of our organization as it is to the moral fabric of the individual spirit.

I am grateful for the opportunity which you have given me to serve as your president during the past year, and I am looking forward to many more years of fruitful endeavor in the common cause.

Inventory of Child Life Research

The Clearing House for Research in Child Life of the Children's Bureau has issued a new inventory of studies in progress. "Research Relating to Children: An Inventory of Studies in Progress, Bulletin II" first came out in 1950 and covered the period December, 1948–July, 1949. Since then three supplements, the latest covering the period April, 1954–February, 1955, have been issued. Together they constitute an almost complete list of research projects in child life carried on during the past six years.

Like the others, Supplement 3 is for research use only. The supply is therefore limited and is available, in addition to those reporting their ongoing projects, primarily to libraries, directors of research, and heads of departments.

Research workers may register their studies or ask for information from Clearing House for Research in Child Life, Children's Bureau, Washington 25, D.C.

A Profile of the Public Health Worker

EDWARD M. COHART, M.D., F.A.P.H.A., and
IRA V. HISCOCK, Sc.D., F.A.P.H.A.

In any agency unsettling questions about the normality of the current program, the level of staff education, the salary range, working conditions in general, and the like matters are likely to arise. Briefly pictured here are some broad averages with which some home-grown conditions may be compared.

This description of the public health worker is based on a study of 1,129 workers in state and local health departments in the states of Connecticut, Maryland, Michigan, and New York.* The characteristics of state and local personnel were surprisingly similar in many respects. Such differences as were found are discussed in other papers. Because our sample did not include either all, or a random sample, of the health departments in the states that were studied, and to the extent that state-local differences existed in staffing patterns, activities, and characteristics of personnel, the results, as reported here, must be considered as good approximations only, rather than as scientifically exact descriptions of the facts.

Only 17 per cent of professional and semiprofessional public health workers started their careers in public health. The average public health worker entered public health with seven years' experience in other fields. As can be seen in Table 1, laboratory and statistics personnel had least experience, whereas medical and sanitation personnel had most experience outside public health. For physicians and nurses, this experience was frequently in hospitals or related institutions; for other personnel, experience in business or industry was more common. Half the physicians had been in private practice prior to entering public health.

A number of factors determined the individual's entry into public health. Most prominent among these were chance, personal contacts and the attraction of the work. Each of these three reasons was given by about 20 per cent of the workers. A slightly smaller proportion attributed their entry into public health to favorable working conditions.

In addition to his work experience in other fields, the average worker had public health experience of ten and a half years' duration. Laboratory personnel had least, and medical personnel most, experience in public health (Table 1).

In an assessment by the workers of the outstanding values of their total work experience, 26 per cent stressed the opportunities that this experience

* In a few instances information gathered from Colorado and Florida, states that were visited early in the development of this study, is also included. The information was obtained by interview, observation, and time study, during a three-year period from 1951 through 1953. Time-study data were collected in Michigan and Maryland. The methods used in this study were described in Public Health Reports,[1, 2] which has also published several detailed descriptions of the findings.[3-9]

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This paper was presented before the Health Officers Section of the American Public Health Association at the Eighty-Third Annual Meeting in Kansas City, Mo., November 15, 1955.

Table 1—Mean Duration of Public Health Workers' Experience in Years

Service	Outside Public Health	In Public Health
All Services	7.0	10.5
Medical	8.6	13.0
Nursing	6.5	10.7
Sanitation	8.2	10.9
Laboratory	5.4	8.8
Health education	7.6	10.1
Statistics	5.6	11.2
Other professional	9.2	10.2

provided for general learning, and the same percentage, the opportunities for learning specific technical procedures. A slightly smaller percentage emphasized the opportunities to learn about interpersonal relations and to develop the qualities of personality conducive to good relations. Eighteen per cent found their past experience particularly valuable because of the knowledge and appreciation of the community that it provided; 15 per cent, because of the knowledge and appreciation of organization and administration; and 7 per cent, because it enabled them to develop a philosophy of public health. Table 2 reveals differences among the services in this regard. For example, sanitation, laboratory, and health education personnel, more than the other groups, tended to stress the specific technical procedures that they had learned; nurses and sanitation personnel emphasized interpersonal relations; physicians and health educators stressed knowledge of the community; and physicians thought their past experience particularly valuable because of the opportunities it had given them to develop a philosophy of public health.

Sixty per cent of public health workers possessed bachelor's or higher degrees (Table 3). Almost half of this group had higher degrees. Only 8 per cent of the workers lacked additional formal education beyond high school. Statistics and sanitation personnel made up the bulk of this group of workers. On the other hand, a much higher proportion of statistics, sanitation, and laboratory personnel than of nurses possessed graduate degrees.

The emphasis of collegiate and graduate education was in the natural sciences. At least two-thirds of medical, sanitation, and laboratory scientist personnel, and one-third of the other groups, had major education in the natural sciences. Less than 10 per cent of public health

Table 2—Per cent of Public Health Workers, by Service, Who Stressed Stated Categories of Learning Opportunities in Past Experience

Service	Learning Opportunity						
	General Learning	Specific Technical Procedures	Interpersonal Relations	Knowledge of Community	Administration	Philosophy	Other
All services	26	36	23	18	15	7	22
Medical	28	16	21	41	13	23	14
Nursing	30	15	31	20	12	7	27
Sanitation	31	42	30	14	20	6	6
Laboratory	22	38	5	5	15	1	29
Health education	9	59	9	32	23	0	18
Statistics	22	30	16	4	15	0	18
Other professional	17	24	16	28	23	5	18

Table 3—Per cent of Public Health Workers, by Service, with Stated Levels of Education

Service	Highest Level of Education				
	High School or Less	1–4 Years' Undergraduate Training	Bachelor's Degree	Master's Degree	Doctor's Degree
All services	8	32	33	15	12
Medical	0	0	0	0	100
Nursing	0	58	34	8	0
Sanitation	22	17	32	22	7
Laboratory	10	8	53	20	9
Statistics	43	9	24	18	6
Other professional	10	28	21	31	10

personnel had major education in the social sciences, while education in general administration was rare.

Only 10 per cent of public health workers had graduate degrees in public health (Table 4). An additional 23 per cent had taken baccalaureate majors or minors in public health or had a certificate in public health nursing. Except for nurses, half of whom belonged to this group, relatively few public health workers fell into this category. The public health training of 41 per cent of the workers had been restricted to informal training only, and 26 per cent of the workers had no public health training. There were relatively few nurses and physicians, but close to half of all other personnel, in the group with no public health training. Short courses and institutes were the most frequent type of informal public health training. Of all the public health workers, half had taken short courses or institutes, 30 per cent had undergone field training with other agencies, and 20 per cent had participated in planned in-service training.

As was stated previously, our information about the allocation of the public health workers' time to programs and to specific functional categories of

Table 4—Per cent of Public Health Workers, by Service, with Stated Levels of Public Health Training

Service	Highest Level of Public Health Training			
	None	Informal Public Health Training Only *	Baccalaureate Major or Minor or Certificate in Public Health Nursing	Graduate Degree
All services	26	41	23	10
Medical	23	20	1	56
Nursing	3	45	49	3
Sanitation	52	34	6	8
Laboratory	47	49	0	4
Statistics	42	52	0	6
Other professional	42	32	3	23

* Includes planned inservice training, institutes, short courses, field training, and the study of public health in the basic training of nurses.

Table 5—Per cent of Health Department Time Devoted to Categorical Programs

Program	Local Health Departments		State Health Departments	
	Michigan	Mississippi *	Michigan	Mississippi *
Maternal and Child Health	48.2	36.5	16.0	19.4
Maternal	....	13.2	....	6.1
Infant	15.8	7.6	8.9	2.1
Preschool	....	4.4	....	1.1
School	27.4	11.3	2.2	10.1
Crippled children	3.1	....	0.1	....
Dental hygiene	1.9	....	4.8	....
Environmental Sanitation	22.5	28.1	10.1	14.4
Tuberculosis	12.9	10.1	12.9	11.4
Acute Communicable Diseases	10.2	11.2	12.4	7.6
Venereal Disease	2.2	9.7	21.0	31.8
Chronic Disease	0.9	3.4	4.2	8.1
Chronic disease	0.7	2.1	1.2	0.8
Cancer	0.0	1.1	2.9	5.0
Heart	0.2	0.2	0.1	2.3
Mental Health	2.6	0.6	0.6	5.1
Industrial Hygiene	0.1	0.2	21.4	2.2
Civil Defense	0.4	....	1.4	....

* From Milne, et al. Time Study of Public Health Activities in Mississippi. Pub. Health Rep. 68:378-390 (April), 1953.

activity was obtained in each instance from only one state. The only similar published information on the program distribution of working time is that reported for Mississippi by Milne, et al.[9] A comparison of the two states reveals several important differences, but the general patterns are similar. The results reported here are conclusions drawn from both studies. As for the functional distribution of the workers' time, the study made in Maryland is the only one of its kind and, therefore, will be used as the basis for discussion.

In the local health departments more time was devoted to maternal and child health than to any other program (Table 5). In Mississippi, slightly more than one-third, and in Michigan almost one-half, of the time was devoted to programs concerned with maternal, infant, preschool, and school health, and the dental hygiene and crippled children's programs. In addition, the local health departments in each state devoted slightly more than 10 per cent of their time to acute communicable disease control.

Environmental sanitation programs absorbed approximately 25 per cent of the local health departments' time in each state, while the time devoted specifically to industrial hygiene was negligible.

A little more than 10 per cent of the time was devoted to tuberculosis and somewhat less time to venereal disease control.

The mental health program and the program for all the chronic noninfectious diseases of adult life accounted for less than 5 per cent of the time in all.

In the two state health departments, on the other hand, primary emphasis in terms of time was given to venereal disease control. More than 20 per cent

of the time was devoted to this program in Michigan and more than 30 per cent in Mississippi.

Maternal and child health accounted for somewhat less than 20 per cent of the time in each state, with acute communicable disease control contributing another 10 per cent.

Between 10 and 15 per cent of the health departments' time was devoted to environmental sanitation programs and in Michigan an additional 20 per cent was spent in industrial hygiene activities.

Tuberculosis control accounted for the same proportion of the time of the state health departments as of the local health departments, namely, a little more than 10 per cent.

The chronic diseases and mental health tended to receive more emphasis in the state health departments than in the local health departments but, even in Mississippi, where the emphasis on these programs was greater, no more than 8 per cent of the time was devoted to the chronic diseases and 5 per cent to mental hygiene.

The state and local health departments in Maryland had essentially similar distributions of time in relation to the types of functions performed (Ta-

Table 6—Per cent of Time Devoted to Different Categories of Activity in the State and Five County Health Departments in Maryland

Category of Activity	Service						
	Medical	Nursing	Sanitation	Laboratory	Secretarial*	Other	All
State Health Department							
Technical	18.6	23.3	51.5	39.4	2.6	25.1	30.2
Ancillary	13.0	13.8	16.3	47.7	80.4	31.4	37.3
Administration	34.3	49.5	17.6	10.0	8.9	31.7	20.9
Planning programs	13.1	6.5	5.0	3.0	0.7	2.0	4.1
Giving supervision and training	6.2	30.4	3.8	4.3	3.5	12.8	8.0
Receiving supervision and training	7.5	10.3	7.5	1.5	2.9	5.7	5.1
Management	7.5	2.3	1.3	1.2	1.8	11.2	3.7
Community Relations and Organization	33.6	13.1	13.4	2.3	6.6	10.0	10.6
Activities with other agencies	20.1	9.0	5.8	1.0	2.3	6.2	5.6
Public information and education	4.1	1.2	7.0	0.8	4.3	3.1	3.5
Professional education	9.4	2.9	0.6	0.5	0.0	0.7	1.5
Social Activities	0.4	0.3	1.0	0.3	1.6	1.7	0.9
Five County Health Departments							
Technical	28.4	40.5	51.6	54.2	5.7	41.7	37.2
Ancillary	10.4	29.1	31.1	42.9	79.1	22.9	33.2
Administration	34.2	17.5	7.7	2.4	6.1	20.9	16.5
Planning programs	8.1	4.5	1.8	0	0.3	4.0	3.9
Giving supervision and training	11.6	6.8	2.9	1.3	1.4	5.5	6.0
Receiving supervision and training	9.3	5.5	2.3	1.0	1.6	6.0	5.0
Management	5.2	0.7	0.7	0.1	2.8	5.4	1.6
Community Relations and Organization	25.2	11.9	6.1	0.2	8.4	13.0	11.9
Activities with other agencies	20.6	6.4	3.7	0	0.5	3.8	6.2
Public information and education	4.4	5.1	2.4	0.2	7.9	6.4	5.2
Professional education	0.2	0.4	0	0	0	2.8	0.5
Social Activities	1.6	1.0	3.3	0.2	0.8	2.5	1.3

* Includes only those secretaries and clerical personnel whose work was not entirely restricted to ancillary activities.

ble 6). Roughly one-third of the time was spent in performing technical or direct service activities; one-third, in administration and community relations and organization; and the remaining one-third, in ancillary activities, or those activities which are considered to be necessary to the proper performance of the other two large groups of activity, but which do not require professional skills. The State Health Department devoted less time to technical activities and more time to administration than the county health departments.

There were conspicuous differences among the services in the types of functions performed. Thus, medical personnel tended to spend less time than the other groups of personnel in direct services and in ancillary services, but more time in administration and community activities. Sanitation and laboratory personnel devoted a relatively large proportion of their time to technical and ancillary services. The extent to which the secretarial force engaged in other than ancillary activities was surprisingly large. The bulk of this time was devoted to administration and community activities. The secretaries in the local health departments play a particularly important role in public health information and education. In the public relations sense, therefore, many health departments might be as good as their secretaries.

The workers whose education, experience, and activities have been described earned an average annual salary of $4,500, within a very broad range of $2,100–$14,000. Salary differences were related to specific responsibilities, service, administrative level, governmental level, and the wage scales of the individual agencies. In general, salaries in state agencies, with regard to both the upper and lower limits and the mean, were somewhat higher than those in local agencies. Medical personnel, with a salary range of $4,200–$14,000 and an average annual salary of $9,000, earned almost twice as much as any other group. Nurses were the lowest paid personnel. Their salaries fell within a range of $2,100–$7,300; their average annual salary was $3,600. The average annual salaries for personnel in the other services ranged between $4,200 and $4,700, and the spread was from $2,100 to $12,000.

Now, what were the satisfactions and dissatisfactions of these public health workers? First, it should be said that about 60 per cent of the workers were happy with public health work in general, even though some of them expressed dissatisfaction with specific aspects of their jobs. Fourteen per cent were unhappy in public health work generally, and the remainder expressed no opinion one way or the other.

Satisfactions and dissatisfactions were related specifically to salary and job security, status in the agency and interpersonal relations, and conditions of work (Table 7). Expressions of satisfaction with any aspect of the conditions of work and any aspect of status and interpersonal relations on the job were encountered more frequently than satisfaction with salary and job security. The greatest source of satisfaction was in relations with fellow workers. Conditions of work were a frequent source of satisfaction. They were also the most frequent source of dissatisfaction. Only slightly less frequent was concern for salary and job security. The proportions dissatisfied with their conditions of work and with their status and interpersonal relations on the job were similar for the four major services, but more sanitation personnel than those in the other services were dissatisfied with salary and job security.

In summary, in the jurisdictions studied the average worker comes to public health after seven years' experience in other fields. His entry into

Table 7—Feelings of Health Department Personnel About Their Work

Per cent of Personnel Who Expressed Satisfaction with:	Public Health in General	Salary and Job Security	Status and Interpersonal Relations	Conditions of Work
All	60	22	32	38
Medical	54	17	24	35
Nursing	70	15	38	41
Sanitation	68	30	44	51
Laboratory	45	31	21	28
Other professional	46	28	20	29
Per cent of Personnel Who Expressed Dissatisfaction with:				
All	14	25	15	31
Medical	17	12	8	36
Nursing	14	21	14	33
Sanitation	14	42	13	32
Laboratory	15	29	19	34
Other professional	11	21	23	19

public health is most often dictated by chance, personal contacts, or the inherent attraction of public health work. The average worker, in addition to his other experience, has also had 10 years' experience in public health.

The majority of professional and technical workers in public health are college graduates. Almost half the college graduates also hold graduate degrees, but only a minority of these are in public health. Education in the natural sciences is the rule; education in the social sciences is uncommon.

Between one-third and one-half of all public health time in local agencies is devoted to maternal and child health; one-quarter, to environmental sanitation; approximately 10 per cent each, to communicable disease, tuberculosis, and venereal disease; and the remaining 4 or 5 per cent to chronic disease, mental health, industrial hygiene, and civil defense.

In the state health departments venereal disease, involving 20 to 30 per cent of all public health time, receives major emphasis, and is closely followed by maternal and child health. "Orthodox" sanitation programs account for between 10 and 15 per cent of the time, but another 20 per cent of the time is devoted to industrial hygiene in one highly industrialized state. Tuberculosis and communicable disease control each takes about 10 per cent of the time. And the remaining 10 per cent, more or less, is devoted to the chronic diseases, mental health, and civil defense.

Roughly one-third of the time of health department personnel is devoted to giving direct services; one-third, to administration and community activities; and one-third, to supporting activities.

Most public health workers are happy to be in public health, but one in seven feels that "the grass is greener" elsewhere. More specifically, unsatisfactory conditions of work and poor salaries were the most frequent reasons for discontent.

This is the picture presented by an admittedly small and not necessarily representative segment of public health

workers. Even though the percentages reported here may be altered by future studies on a broader base, they should serve as useful preliminary observations. It would be desirable to ascertain whether these conditions hold true generally or, if this is not the case, what factors are responsible for the differences. The findings are to be looked upon not merely as a description of existing conditions but, even more, as the necessary information for an assessment and evaluation of current public health practices, especially in relation to factors of administration and personnel. The challenge for a careful reappraisal of our public health organization and practices is clearly one of our most important responsibilities. This need should be considered simultaneously with the opportunity to develop better health indexes and indicators for measurement of results as a basis for planning.

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Program to Develop Cancer Drugs

A "program of cooperative research and development to find and produce effective drugs for the treatment of cancer" has been launched by six national voluntary and official agencies. A Cancer Chemotherapy National Committee has been established as the top policy-making body to define the scope of the program, coordinate the activities of the sponsoring organizations, and observe progress.

The committee is headed by Sidney Farber, M.D., scientific director of the Children's Cancer Research Foundation in Boston. Its executive secretary, who is in charge of the full-time staff provided by the sponsoring agencies, is Kenneth M. Endicott, M.D., of the National Cancer Institute. Staff headquarters are at the Cancer Chemotherapy National Service Center of the National Institutes of Health in Bethesda, Md.

The six sponsoring groups are the American Cancer Society, Atomic Energy Commission, Damon Runyon Memorial Fund for Cancer Research, Veterans Administration, Food and Drug Administration, and the National Cancer Institute of the Public Health Service.

Evaluation of the Quality of Patient Care

PAUL R. HAWLEY, M.D.

Presented here are two telling examples of the way that services essential to good patient care may become neglected in hospitals that are assumed to be well run. The examples are of special moment to those of us concerned with current public health practice.

From his beginning man has been forced to appraise property and to assess virtues. He has been eminently successful with property and has invented numerous mechanical devices, ranging from the abacus to the electronic calculator, to record his financial progress. He has been less successful in his assessment of the intangibles and throughout the ages has made little progress in the mechanical collection, tabulation, and analysis of valid opinions. This is particularly true of the evaluation of the quality of medical care given to hospital patients, a field in which a lack of logic, organization, scientific methods, practicability, and universal reporting has reigned supreme. In fact, in a civilization noted for its business efficiency and its ability to enumerate the yearly production of automobiles, cans of soup and bars of soap, we have no exact statistical information concerning such fundamentals as the number of appendectomies performed or the number of pneumonia patients treated in our hospitals each year. It is small wonder that our knowledge of the quality of patient care is so little.

The medical profession and hospitals have long been aware of the need for an effective and practicable method for evaluating the quality of patient care, and numerous attempts have been made during the past forty years to develop an acceptable medical audit. None of these has been entirely satisfactory, for they have been burdened with the following grave deficiencies: (1) Nonvalid statistics, such as discharge conditions of "Recovered" and "Improved"; (2) a survey of limited and nonconclusive criteria, such as infections and deaths; (3) impracticable methods of collecting, tabulating, and analyzing the data selected; (4) demands for excessive participation by busy practicing physicians; and (5) emphasis on punitive action against physicians. In view of these deficiencies it is not surprising that very few effective medical audits are conducted.

For more than two years the American College of Surgeons has been cooperating closely with the Professional Activity Study of the Southwestern Michigan Hospital Council in a research project designed to develop an effective, practicable, and inexpensive method by which medical staffs of hospitals can evaluate the quality of patient care. From this project has come a new and workable concept of the medical audit, which is based on the premise that valid hospital statistics will indicate the areas of medical practice requiring scrutiny by the medical staff of the hospital. This method, therefore, has two components: (1) a statistical analysis of every medical record of every patient discharged from the hospital which

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provides routine hospital statistics—analyses comparing the practices and experiences of all participating hospitals and physicians and medical record room indexes; and (2) an evaluation of selected records by the medical staff as indicated by the statistical analysis, which permits an effective and time-saving spot check by physicians. Both components use the services of a regional statistical service which processes the code sheets by business machines and returns to each individual hospital all the necessary data, including the medical record room indexes, which are a requirement for accreditation by the Joint Commission on Accreditation of Hospitals. The use of such a center makes possible the standardization of hospital statistical information which permits comparison of similar statistics among individual hospitals. Also, it reduces the cost of record keeping to the hospitals. This project has received an intensive test in 23 hospitals in 21 communities in three states, and the results demonstrate conclusively that it is an effective and practicable method for evaluating the quality of patient care. Of the greatest importance has been its enthusiastic reception by the physicians of each of these participating hospitals.

The statistical analysis of every medical record of every discharged patient is conducted by the hospital medical record room librarian who, with a little experience, can complete each code sheet in five minutes, relieving her of all further responsibility for statistics and indexing. This part of the project deals only with certain factual data that appear in the medical record of every discharged patient. If a blood count was done and recorded, it is so recorded on the code sheet. If a chest plate or urinalysis was not done, this is recorded on the code sheet. Other pertinent data such as age, sex, patient's physician, final diagnoses, and operations are also recorded. The medical record librarian is competent to transfer such factual data to the code sheet which is then sent to the Regional Statistical Service Center where the data are processed and correlated with data from other discharges. This provides comparative statistical analyses of the medical care of the same disease in participating hospitals and enables the medical staffs of the individual hospitals to determine the reasons for wide variations in patterns of care.

An example of the variations which may require evaluation is presented in Figure 1. The chart offers a comparative analysis of the percentage of patients without blood sugar determinations who had been discharged with a final diagnosis of diabetes mellitus from 15 community hospitals, each of which has adequate laboratory facilities available. Moreover, these are typical community hospitals in an area noted for its above-average quality of medical and hospital care. Yet, in eight of these hospitals at least 10 per cent of the patients with recorded diabetes received no blood sugar determinations during their hos-

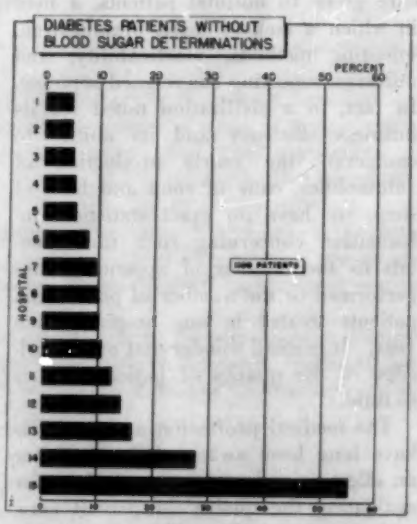

Figure 1

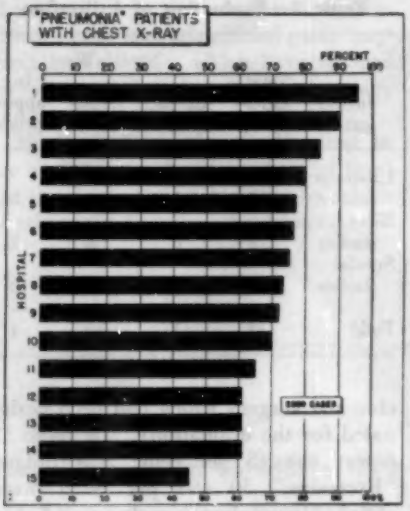

Figure 2

pital stay. Certainly, the medical staffs of these hospitals would be interested in ascertaining the reasons for failure to use such a recognized, established, and authoritative test in the diagnosis and treatment of diabetes.

Another example of variations in medical care requiring evaluation by the medical staffs is seen in Figure 2. This shows a comparative analysis of the percentage of patients with pneumonia who received at least one chest x-ray during their hospital stay in these 15 community hospitals, each of which maintains adequate x-ray diagnostic facilities. Yet, in only three of these hospitals did more than 80 per cent of the patients receive at least one chest x-ray. To me, a physician, it would appear essential to have at least two x-rays in patients with pneumonia—one to establish the diagnosis and the second to confirm its resolution. Surely, the medical staffs of these hospitals would investigate the failure to use such a definitive diagnostic examination as the x-ray of the chest in patients with a positive or possible diagnosis of pneumonia. One hospital in this group of 15 hospitals did just that after receiving a copy of this comparative analysis of pneumonia patients. The first reaction of the physicians of this hospital was one of disbelief that this statistic could be true for their hospital. However, a review of the pneumonia records by these physicians convinced them that their practice had been accurately recorded in this analysis. Figure 3 shows the increase in the number of chest x-rays taken in pneumonia patients in this particular hospital during the subsequent 12 months.

The evaluation of the quality of patient care can be done only by physicians and is best accomplished by physicians of the medical staffs of the individual hospitals. However, it must be realized that the scope of the evaluation must be limited by the amount of time that busy, practicing physicians can give to a conscientious review of the medical records. Time studies of the work of the medical staff audit committees participating in the college's Medical Audit Research Project revealed that a committee may spend anywhere from five minutes to more than 30 minutes in reviewing each record and completing the code sheet, depending on the nature and complexity of the case. Because of this time factor, it is not possible for physicians to evaluate the care of every patient discharged from the hospital. This fact was emphasized by the experience of one medical staff audit committee which volunteered to evaluate

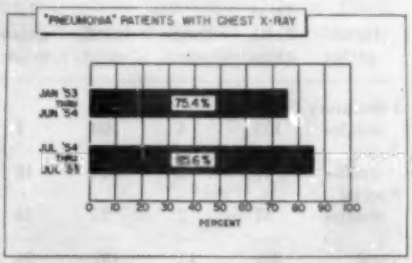

Figure 3

every medical record of every patient discharged. By the time the committee had carefully evaluated 1,697 consecutive records over a period of six months, the physicians were convinced that it was not practicable to assume a burden of this size indefinitely. One of the most intriguing aspects of this particular study was the audit committee's evaluation (Table 1) of the utilization of laboratory, x-ray, and special diagnostic facilities in these 1,697 cases.

This shows that the committee criticized a total of 251 cases (15 per cent of the total of 1,697 cases) of which 11 (4 per cent) were judged "Excessive," 187 (75 per cent) were said to be "Insufficient," and 53 (21 per cent) were thought to be "Inappropriate." This is a small community hospital, without interns or residents, and staffed by competent, thoughtful, and judicious physicians who believed that they were not using enough diagnostic investigative procedures. This same belief was evident from the audit committee's evaluation of the same diagnostic procedures in a second hospital (Table 2) which is a moderately large teaching center, staffed by specialists and approved for intern and resident training.

This table shows that the committee criticized a total of 32 cases (13 per cent of the total of 252 consecutive cases from selected categories of medicine and surgery which had been designated for the evaluation). Of these 32 cases: one (3 per cent) was judged "Excessive," 30 (94 per cent) were called "Insufficient," and one (3 per cent) was recorded as "Inappropriate."

Table 1—Evaluation of Utilization

Investigation	Total Criticisms	Studies Were: Excessive	Insufficient	Inappropriate
Laboratory studies	103	4	98	1
X-ray studies	87	5	64	18
Special studies	61	2	25	34
Total	251	11	187	53

Table 2—Evaluation of Utilization

Investigation	Total Criticisms	Studies Were: Excessive	Insufficient	Inappropriate
Laboratory studies	17	1	16	0
X-ray studies	9	0	8	1
Special studies	6	0	6	0
Total	32	1	30	1

The evaluations of the utilization of diagnostic facilities of these two separate and totally different types of hospitals raise two interesting points for present speculation and future investigation: (1) The physicians in neither of these two hospitals had any knowledge previous to the presentation of these statistics that such a high percentage of deficiencies of utilization were present in their respective hospitals, even though each medical staff had conducted the customary checks by medical record committees in the past. This strengthens our belief that the presentation of statistical evidence about the practice of medicine emphasizes facts which are missed entirely by methods of evaluation which fail to tabulate, analyze, and compare these practices. It is further our belief that statistical evidence can be prepared most efficiently by modern business machines. (2) The conclusions of the physicians of these two hospitals that more laboratory, x-ray, and special studies should be done to improve the quality of patient care introduces the question of increasing the cost of patient care. This

should be of particular interest to Blue Cross Plans and other third-party payment organizations which have claimed on occasion that too many laboratory and x-ray investigations are made.

Much work remains to be done in the evaluation and revision both of present standards and of technics by which physicians can judge the adequacy of medical care. Unscientific, illogical, and nonvalid hospital statistics must be discarded, and all hospitals must compute their practices by a standard method. And finally, an effective and practicable method of evaluating patient care must be adopted. One such method is now available to every hospital.

Joint Commission on Mental Illness

A Joint Commission on Mental Illness and Health has been organized as a result of the Mental Health Study Act of 1955 (Public Law 182). This act provides for a national survey of all aspects of problems related to mental illness and health. It authorizes appropriations of $1,250,000 over a three-year period for this purpose. For the first year $250,000 has been appropriated and assigned to the Surgeon General of the Public Health Service who may grant it to one or more nongovernmental organizations to carry out the study.

The Joint Commission was incorporated in August. Its first official meeting was held in Washington on October 8 at which organization was completed, officers elected, and plans made for an application for a grant from the Public Health Service to carry out the study. Dr. Kenneth E. Appel, professor of psychiatry, University of Pennsylvania School of Medicine, was elected president. It is hoped that the nation-wide study may be under way by 1956.

The Joint Commission is made up of representatives of 21 national agencies known as initial organizational members. Currently, the American Psychiatric Association and the American Medical Association are each entitled to five representatives, the other 19 to one each. John D. Porterfield, M.D., director of the Ohio State Department of Mental Hygiene and Correction, represents the American Public Health Association on the commission.

Chairman of the Board of Trustees is Leo H. Bartemeier, M.D., chairman of the Council on Mental Health of the American Medical Association. Acting executive director is Daniel Blain, M.D., executive director of the American Psychiatric Association.

Housing and Health on Oahu

ROBERT C. SCHMITT

There are two quite unusual features about this brief report. **It** ***appears to be the first ecological study of this kind for an insular area. Another feature is the use of dilapidation, as well as overcrowding, as an index of housing quality. Employment of partial correlation analysis is another innovation in this context.***

The close association between dilapidated or overcrowded housing and high death and disease rates is given new documentation by an analysis of Honolulu census tract statistics. This study [1] was initially undertaken by the Honolulu Redevelopment Agency to obtain needed information regarding existing or proposed slum clearance and urban redevelopment areas. Although data were limited to a single metropolitan area, methodology and findings of the study may have a more widespread interest.

The research was designed to answer, as well as possible, two questions: (1) How closely do areas of deteriorated or overcrowded housing on Oahu coincide with areas of high morbidity and mortality? (2) Which of the two housing characteristics is the more closely related to community health?

Answers to these questions were based on detailed analysis of census tract statistics. All parts of the Island of Oahu—that is, the Honolulu Standard Metropolitan Area—were included in the tabulations. For each of the 42 census tracts comprising this area, the following rates were computed from data issued by the U. S. Bureau of the Census, Territorial Department of Health, and other sources:

1. Dwelling units without running water or dilapidated as a per cent of all units reporting condition, 1950.

2. Dwelling units with 1.51 or more persons per room as a per cent of all occupied units reporting persons per room, 1950.

3. Average annual civilian deaths, 1948–1952, per 1,000 civilian population, 1950.

4. Deaths under one year per 1,000 live births, 1948–1952,

5. Average annual deaths from suicide, 1948–1952, per 1,000 civilian population 14 years of age or more, 1950.

6. Average annual new civilian tuberculosis cases, 1948–1952, per 1,000 civilian population, 1950.

7. Average annual new civilian venereal disease cases, 1950–1952, per 1,000 civilian population 14 years of age or more, 1950.

8. Average annual first admissions to the Territorial Mental Hospital (except military and from other institutions), 1948–1952, per 1,000 civilian noninstitutional population, 1950.

Separate rates were then computed for census tracts grouped on the basis of dilapidation and overcrowding ratios. It was found, for example, that the over-all death rate for the 21 tracts with less than 12.4 per cent of their units dilapidated was 5.22, compared to 6.34 for the 21 tracts with 12.4 per cent or more of their units dilapidated. Similarly, the 21 tracts with less than 12.0 per cent of their occupied units overcrowded (that is, with 1.51 or more persons per room) had a combined over-all death rate of 5.11, compared to 6.31 for the 21 tracts with a greater percentage of their units classified as

Table 1—Mortality and Morbidity Rates, by Quality of Housing, for Oahu Census Tracts—1948–1952

Quality of Housing *	Number of Tracts	Mortality or Morbidity Rate *					
		All Deaths	Infant Deaths	Suicides	Tuberculosis Cases	Venereal Disease Cases	Mental Disorders
All census tracts	42	5.70	23.9	0.131	1.31	2.28	0.78
Per cent of units dilapidated							
Under 12.4	21	5.22	23.2	0.118	1.06	1.37	0.64
12.4 and over	21	6.34	25.1	0.149	1.66	3.04	0.95
Per cent of units overcrowded							
Under 12.0	21	5.11	23.1	0.123	1.09	1.63	0.68
12.0 and over	21	6.31	24.9	0.139	1.55	2.56	0.87

* See text for description of rates.

overcrowded. Similar rates were computed for infant mortality, suicide, tuberculosis, venereal disease, and mental disorders. In all instances, the rates for the more dilapidated and more overcrowded census tracts were greater than the rates for tracts with less dilapidation and overcrowding. Differences between areas of good and bad housing were most evident with respect to venereal disease and tuberculosis rates, but least so in regard to infant mortality and suicide. Rates for each category are given in Table 1.

Similar relationships were disclosed by correlation analysis of the census tract rates. Tuberculosis was the variable most closely associated with housing substandardness, both with respect to dilapidation ($r = 0.726$) and overcrowding ($r = 0.639$). High zero-order correlations were also found for venereal disease rates and, to a somewhat lesser degree, for mental disease and the over-all death rate. Infant mortality and suicide revealed relatively little correlation with housing rates. Coefficients are given in full in Table 2.

A clue to the relative importance of dilapidation and overcrowding of housing is provided by partial correlation analysis. Between dilapidation and the over-all death rate, for example, the coefficient of partial correlation, with overcrowding held constant, was –0.020; between overcrowding and the death rate, with dilapidation held constant, the coefficient was 0.349. It thus appears that overcrowding was much more closely associated than dilapidation with the over-all death rate. Partial correlations indicated overcrowding to be the more significantly correlated variable in infant mortality and the venereal disease rate as well. Dilapidation showed the higher coefficient of partial correlation, however, in regard to suicides, tuberculosis, and mental disorders. These data suggest that structural condition was the more significant factor in some health problems, occupancy in others. Individual correlations are listed in Table 2.

It should be emphasized that these correlations are not, in themselves, proof of causative relationships. The influence of housing on health has been recognized for many years; the Ameri-

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Table 2—Correlation Between Housing Quality and Mortality and Morbidity Rates, for Oahu Census Tracts—1948–1952

Correlated Variable *	Coefficient of Correlation *					
	All Deaths	Infant Deaths	Suicides	Tuberculosis Cases	Venereal Disease Cases	Mental Disorders
Zero-order coefficients						
Dilapidation	0.463	0.248	0.374	0.726	0.597	0.529
Overcrowding	0.556	0.322	0.320	0.639	0.625	0.514
Partial coefficients						
Dilapidation †	—0.020	—0.049	0.204	0.452	0.160	0.206
Overcrowding ‡	0.349	0.217	0.007	0.065	0.281	0.144

* See text for description of correlated rates.
† Per cent of units overcrowded held constant.
‡ Per cent of units dilapidated held constant.

can Public Health Association "appraisal method," for example, assigns penalty scores of varying severity to dwellings on the basis of inadequate original construction, poor maintenance, and overoccupancy.[2] It is likewise true that ecological correlation has proved a useful method for uncovering many potentially direct relationships, in public health as well as the social sciences.[3] Ultimate "proof," however, must be sought through other technics.

Despite these limitations, there is considerable value in analysis of the kind described. First of all, it focuses attention on the tendency for some (but not all) health problems to cluster in areas of dilapidated or overcrowding housing, and thus encourages cooperative action by health, welfare, and planning agencies. Second, it suggests possible lines of attack for future research in the role of housing in community health. Why, for example, should mental hospital admission and suicide rates—the results, presumably, of similar factors—show such divergent correlations with the housing ratios? Why is dilapidation more closely associated with some types of mortality and morbidity, overcrowding with others? These questions, and others, demand additional study.

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Spread of Poliomyelitis Infection in Nursery Schools

JAMES R. McCARROLL, M.D.; JOSEPH L. MELNICK, Ph.D.; and DOROTHY M. HORSTMANN, M.D.

Unusual circumstances—a poliomyelitis outbreak in the dead of winter in two closely knit groups of susceptibles—provided these investigators with a rare opportunity for an intensive epidemiologic study from which came some clear-cut findings of wide interest.

The apparent erratic spread of paralytic poliomyelitis through a group with known exposure to the virus is now generally explained by the high incidence of inapparent infection. Refinement of tissue culture and serologic technics have effectively demonstrated subclinical infection in a high percentage of contacts often linking apparently unrelated cases.[1-5] Nevertheless inconsistencies in the migration and behavior of the virus continue to be observed and cannot be adequately explained with present epidemiologic tools. This is illustrated in the outbreak discussed in this paper in which poliomyelitis virus was known to have been introduced into three closely similar nursery schools under similar circumstances, and yet showed different patterns of spread.

Epidemiology

Three separate nursery schools with similar physical facilities in the same neighborhood and educating children of the same age group and social backgrounds were involved in this outbreak. The over-all pattern of the epidemic is described elsewhere[6] and only the nursery schools will be considered here.

All three schools are run by hospitals in New York City and are located within three city blocks of each other. Two schools operated by the New York Hospital are located in separate buildings with separate staffs and have no connection with each other. The first of these, the York Nursery School, is operated solely for children of members of the New York Hospital staff and is run by the mothers themselves with one professional teacher. The second, the New York Nursery School, is operated by the Department of Pediatrics for a selected group of children drawn from the neighborhood but otherwise having no connection with the hospital. The third, the Memorial Nursery School, is operated by Memorial Hospital, also for children of its staff members, and is located three blocks from the other two schools. The children in all three schools are from three to five years of age and come from relatively high social levels; there was, however, very little contact between the children of families of the three different groups.

The York Nursery School taught 15 children from 14 families. Eight of these families lived in one apartment building (operated by the New York Hospital for its married house staff doc-

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tors and their families and a few unmarried nurses). The remaining six families were scattered through the neighborhood. The New York Nursery School included 13 children of different families and all lived in different buildings in the area. One of these children, however, lived in the same apartment building as did eight children from the York Nursery School. The Memorial Nursery School had 28 children from 22 families scattered in many houses throughout the neighborhood but none in houses sheltering children from either of the other schools. All three schools were closely similar in population, age group, physical surroundings, and method and time of operation.

The first sign of poliomyelitis occurred when a three-year-old girl in the York Nursery School developed paralytic disease on January 7, 1955. She lived in the apartment house containing eight of the families with children in the York Nursery School, and one child in the New York Nursery School. Ten days after the onset of the first case the 29-year-old father of a second child in the York Nursery School, and living in the same apartment building, developed symptoms of paralytic poliomyelitis. This second nursery school child had been well but a four-year-old brother not attending the school had complained of headache and fever three weeks previously. A third case occurred in the same building 10 days later in the mother of a child who did not attend the school but had been in contact within the apartment house with children from the York Nursery School.

Just prior to the onset of the initial case, a mother of a child in the Memorial Nursery School living in the neighborhood visited two families living in the apartment house where the cases were to occur. She had lived in this building until six months previously and was on friendly terms with two housewives now living there. The mother brought two of her children on this visit and spent the afternoon with two families, both of whom had young children. The children who were visited did not attend any nursery school but there was considerable intermingling of all the children in the building.

Two weeks after this visit to the apartment house a child not attending any school but with two brothers in the Memorial Nursery School developed paralytic poliomyelitis. He apparently became infected through his brother who attended the Memorial Nursery School where the virus had presumably been introduced by the children who had visited the apartment house (Figure 1).

All children in the York and Memorial Nursery Schools were given gamma globulin (0.14 ml/lb immune poliomyelitis globulin) and the schools were temporarily closed. No further cases of paralytic disease developed in these groups.

Throughout this four-week period the weather in New York City remained unusually cold, the temperature averaging 28.7° F, or 4.2° F below normal. It was the coldest January and winter since 1948 and the driest January since the beginning of weather records in 1871.

Methods of Investigation

An outbreak of poliomyelitis under these unusual conditions prompted a thorough investigation. Since three of the four paralytic cases had occurred in the apartment house, interviews were obtained with each family having a child in either of the two nursery schools in which a case of poliomyelitis had occurred, and with all families present in the apartment house. All members of the family were questioned about recent minor illnesses and about contact with families of known cases.

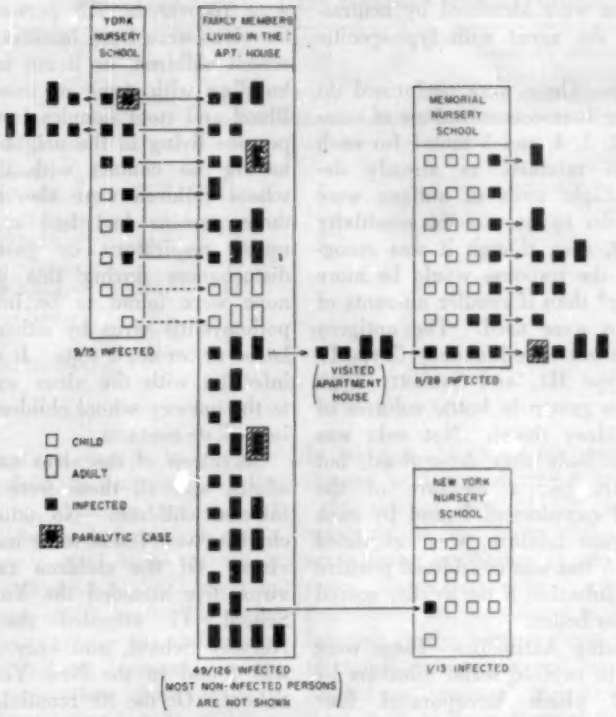

Figure 1—Lines of Midwinter Transmission of Poliomyelitis Virus from York Nursery School to Hospital Apartment House and the Other Two Nursery Schools

Since the outbreak occurred during the peak of the respiratory epidemic season, the great majority of persons interviewed gave histories of minor upper respiratory or gastrointestinal disturbances in the preceding few weeks. No deductions could be made from these histories as to how many of these illnesses represented abortive poliomyelitis infections. Stool samples for virus isolation were obtained from all available persons who might have been infected with the virus. This included all children in the two nursery schools, their siblings, parents, and all residents of the apartment house. Freshly passed stool specimens were obtained in cardboard containers from 257 persons in these groups. The specimens were refrigerated at 4° C for a maximum of 16 hours and then frozen at —20° C until tested. Blood samples for serologic study were also obtained from 262 persons in the same groups. The blood was drawn in sterile vacuum tubes by antecubital puncture, or by jugular puncture in the case of small children. It was then refrigerated until clotted for a maximum of 16 hours and centrifuged. The serum was drawn off and frozen at —20° C until tested for the presence of both complement-fixing (CF) and neutralizing antibodies against poliomyelitis virus.

Virus Isolations—Stools were processed and tested in monkey kidney cultures by the technics in use in this laboratory.[7] Positive cultures from

each person were identified by neutralization of the agent with type-specific serum.

CF Tests—These were performed on plates using four concentrations of complement (2, 3, 4, and 5 units) for each virus-serum mixture, as already described.[8] Eight units of antigen were used in order to increase the sensitivity of the test, even though it was recognized that the response would be more heterotypic[9] than if smaller amounts of the antigen were used. The antigens used in the test were Mahoney (Type I) MEF1 (Type II), and Saukett (Type III) strains grown in bottle cultures of monkey kidney tissue. Not only was the CF antibody titer determined, but the avidity, i.e., a measure of the amount of complement bound by each antigen-serum mixture, was calculated as well.[8] A test was considered positive for recent infection if the avidity scored nine units or better.

Neutralizing Antibodies—These were measured in twofold serial dilutions by a method which incorporated four modifications[7] of the colorimetric test devised by Salk, Youngner, and Ward[10]: (a) Medium 199 containing 2 per cent horse serum was replaced by a simple medium of Hanks' salt solution containing 2 per cent calf serum and 0.5 per cent lactalbumin hydrolysate. (b) Versene-treated cells obtained from monkey kidney cultures grown in Roux bottles were employed. (c) Test tubes were replaced by a white, disposable styrene panel containing cup-like depressions following the suggestion of Rightsel, et al.[11] (d) The cups were "sealed" with Drakeol-35 mineral oil recommended by Salk.

Results

Virus Recoveries—Type I poliomyelitis virus was cultured from the stools of 55 individuals tested, including the four paralytic cases. No other types were recovered. All persons carrying the virus were from families of nursery school children, or living in the same building with some of these children. Blood and stool samples from 16 other persons living in the neighborhood but having no contact with the nursery school children were also tested. All these persons had had symptoms of upper respiratory or gastrointestinal disturbances during this period, but none were found to be infected with poliomyelitis virus by either virus isolation or serologic tests. It seemed that infection with the virus was confined to the nursery school children and their immediate contacts.

Seventeen of the virus carriers were adults, and all these were parents of infected children. No adults without children were found to be harboring the virus. Of the children carrying the virus, five attended the York Nursery School, 11 attended the Memorial Nursery School, and only one carrier was found in the New York Nursery School. Of the 21 remaining children carrying virus, 14 were siblings of children in the various schools and the other seven lived in the hospital apartment house with eight of the children from the York Nursery School (see Table 1).

Antibodies—Both CF and neutralizing antibody tests against all three types of poliomyelitis virus were run on the serum of each individual tested. A total of 58 persons gave serologic evidence of infection by the presence of Type I CF antibodies, closely paralleling the number of virus isolations. However, only 32 of these individuals with CF antibodies also had virus in their stools, so that 26 of these sero-positive individuals were additional infected cases not revealed by virus isolation. Thus a total of 81 persons in all could be shown to be infected.

There was a considerable difference

Table 1—Virus Isolations and CF Antibodies in Each Group

Group	Number Tested	Number Infected	Virus Isolations	Type I CF Antibodies	Number Protected by Type I Neutralizing Antibodies (CF Antibodies Absent)
York Nursery School Children	15	9	5	9	0
New York Nursery School Children	13	1	1	1	1
Memorial Nursery School Children	28	11	11	4	9
Apartment House Children	37	26	15	24	0
Apartment House Adults	90	23	8	21	41

among the various groups in the percentage of infections uncovered by the two procedures. Among residents of the apartment house and children of the York Nursery School twice as many persons showed evidence of infection by the presence of CF antibodies as by virus isolation. Among the children of the Memorial School, however, the reverse was true. Only four children showed CF antibodies but 11 children had virus isolated from their stools (Table 1).

Infection Rates in York and Memorial School Children and Their Families—Since the virus appeared to be circulating primarily in the hospital apartment house and the York and Memorial Nursery Schools further investigation was concentrated in these areas. (The results of the studies on the apartment house group are reported elsewhere.[6]) A total of 20 of the 43 children attending the York and Memorial Nursery Schools were shown to be infected. Seventeen of these had Type I virus isolated from their stools; 13 revealed infection by the presence of Type I CF antibodies. The infected school children had 18 siblings, all of whom became infected. No child who became infected in either school failed to transmit the virus to all his siblings. In addition, 16 of the 64 parents tested showed evidence of recent infection.

In the absence of CF antibodies, many adults, but fewer children, show neutralizing antibodies to one or more types of poliomyelitis virus. These individuals are considered to have been infected in the past, to have since lost their CF antibodies, and now are regarded as "immune" to infection.[12] A total of 35 of the parents of the nursery school children showed significant Type I neutralizing, but no CF, antibody titers. In addition a few neutralizing antibody tests could not be read at lower dilutions because the sera were toxic to the cells used in the test system. If the 35 parents with Type I neutralizing antibodies and the seven whose tests could not be read are eliminated from the group presumed susceptible, only 22 parents remain as potential candidates for infection. Since 16 of these adults were infected the percentage of all susceptible parents infected was 73 per cent, and if only susceptible parents of infected children are considered, the percentage rises to 93 per cent. All parents of infected children except two were either infected or showed only neutralizing antibodies against Type I poliomyelitis virus (Table 2).

Table 2—Family Contacts of Infected Nursery School Children

Group	Number Tested	Number Infected	Virus Isolations	Type I CF Antibodies	Number Protected by Type I Neutralizing Antibodies (CF Antibodies Absent)
Siblings					
York Nursery School	11	11	7	10*	
New York Nursery School	1	1	1	1	
Memorial Nursery School	7	7	7	1	
Parents					
York Nursery School	17	9	3	9	6
New York Nursery School	2	1	0	1	0
Memorial Nursery School	13	7	6	1	4

* No blood obtained from one sibling.

Infection rates in the York and Memorial Nursery Schools were closely similar, but lower than those in infected families. Nine of the 15 children in the York Nursery School were infected (60 per cent), and none of the noninfected children had any Type I neutralizing antibodies (Figure 2). In the Memorial Nursery School 11 of the 28 children were infected, but nine of the noninfected children had only Type I neutralizing antibodies and another three had toxic sera, leaving an infection rate of 61 per cent of susceptible children (Figure 3). Thus it would seem that the closer contact of the home provided greater opportunity for spread of the virus than the more limited contact of a nursery school.

Failure of Virus to Spread in the New York Nursery School—During the course of these investigations the virus was found to have been introduced into a third nursery school. This was the New York Nursery School whose children had no contact with any of the other groups except for a single child who lived in the apartment house where eight of the York Nursery School children lived. Three separate stools secured over a three-week period from this child all yielded Type I poliomyelitis virus and his serum was strongly positive for Type I CF antibodies. Because of the delay inherent in virus isolation procedures, even with tissue culture technics, he was not known to be a carrier until two weeks after the initial specimen was donated, and he continued to attend his school for this period.

Since the children of the New York Nursery School had had this known exposure to the virus, blood samples from all 12 remaining children were tested as for the other groups. Not one of these children showed any evidence of infection by the presence of CF antibodies, although the time interval was long enough for them to have appeared if infection had occurred. Only one of the children had any neutralizing antibodies to Type I poliomyelitis virus so that "immunity" could not have been

a factor. Stool samples were not obtained from these children, but the complete lack of any serologic evidence of infection indicates that attempts at virus isolation would probably have contributed little in this group. The low invasiveness of the virus in this situation, in contrast to its rapid spread in the other two schools, is difficult to explain. No difference can be detected in the physical surroundings, the groups involved, or their immunologic status.

Discussion

The rapid spread of poliomyelitis virus through susceptible groups is well illustrated in the York and Memorial Nursery Schools, where 60 per cent of nonimmune children became infected. The age group involved, i.e., one which is likely to be experiencing its first exposure to any of the three types of poliomyelitis virus, is a highly susceptible one, and comparably high infec-

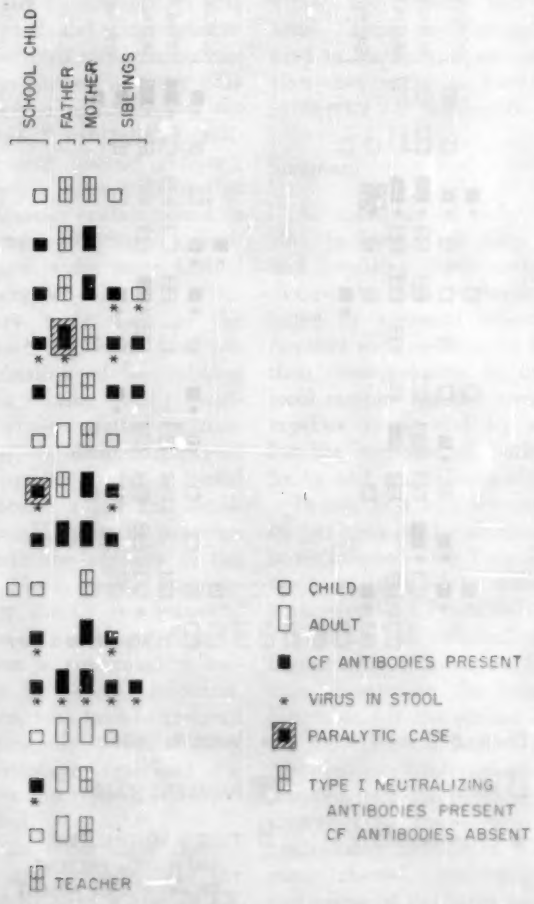

Figure 2—Distribution of Poliomyelitis Infection Among the York Nursery School Children and Their Family Contacts

tion rates have been observed by others who have studied nursery school outbreaks.[4, 13]

The nursery school as a focus of spread to susceptible members of the children's families is also a pattern which has been observed before. A striking feature of the outbreak herein described is the high incidence of clinical infection in the exposed adults: two of the four cases in our group were in young adults, parents of children with inapparent infections. A similar situation was found in the New Canaan outbreak[4] in which the cases were chiefly among the nursery school children and their parents, particularly their mothers. This pattern is doubtless correlated with the increasing number of susceptible adults at the

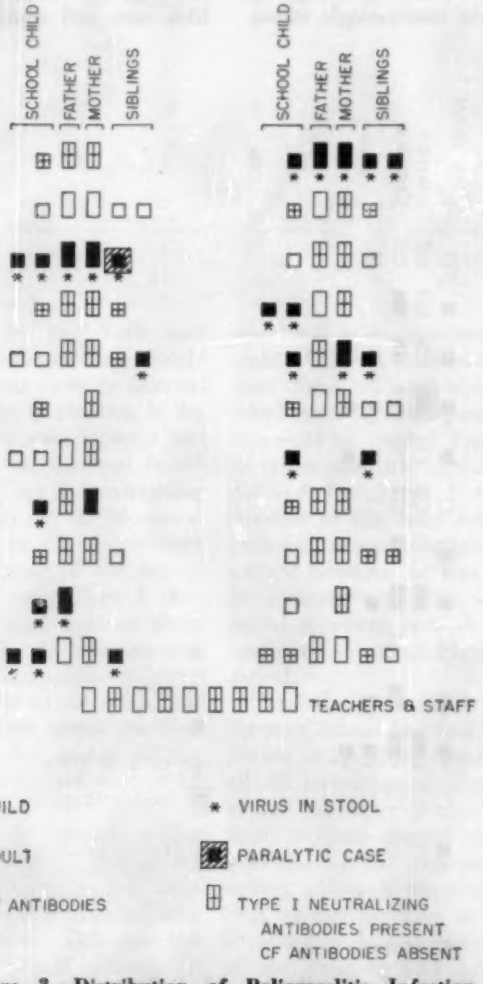

Figure 3—Distribution of Poliomyelitis Infection Among the Memorial Nursery School Children and Their Family Contacts

present time, and the increasing incidence of poliomyelitis in the age group over 15 years.[14] There is some evidence that infection in the adult is more apt to take a clinical form (either paralytic or nonparalytic), while in the young child it is apt to remain inapparent.[15] The results of the present study fall in with these observations.

Poliomyelitis as a family infection is also well exemplified in the present study. We found, as have others,[1-5, 16] that in the family setting the infection spreads to virtually all susceptibles with extraordinary speed and thoroughness. All siblings of infected children became infected. Of the parents of these children who were not protected by the presence of Type I neutralizing antibodies, 93 per cent became infected. These high infection rates suggest that the type of continuous contact found in families is even more effective in spreading the virus than is the more limited contact in nursery schools.

The laboratory tools used in the present study included virus isolation and the determination of neutralizing and complement fixing (CF) antibodies. While virus isolation remains the definitive test, the demonstration of CF antibodies proved to be a useful epidemiologic tool, a rapid and sensitive method of establishing the presence of recent poliomyelitis infection in the group studied. Since, unlike the neutralizing antibody, the CF is a transient one, its presence in significant titer in a single specimen is confirmatory evidence of current (or recent) infection. In young children, who tend to respond with CF antibodies only to the infecting type (i.e., a homotypic reaction) the test also indicates the type of poliomyelitis virus involved.

In adults, on the other hand, heterotypic responses are common, and the individual is apt to have a rise in CF antibodies to two, or to all three types, although the titer is often higher against the infecting type. In the present outbreak it was clear within a few days of the collection of blood specimens, that Type I was circulating among the nursery school children and their families, since by the time the study was undertaken, the outbreak was far enough along that CF antibodies were present in most infected individuals, some of whom were no longer excreting virus.[6] Of 209 persons who submitted both stool and serum specimens, 11 whose stools were positive for Type I virus, nevertheless had negative CF tests. These individuals were considered to be early in the course of infection—too early to have had time to synthesize CF antibodies.

Summary

An outbreak of poliomyelitis occurring in New York City in midwinter and involving three nursery schools is discussed. The outbreak was investigated by personal interviews with all families with children in the school and their close contacts, by examination of stool samples for the presence of poliomyelitis virus, and by serologic tests for the presence of both complement-fixing and neutralizing antibodies.

In the first two schools investigated 60 per cent of the children were found to be infected with Type I poliomyelitis virus, as revealed by virus isolation or possession of CF antibodies, or both.

Families of infected children gave higher rates of infection, indicating that close contact in the home was more favorable for the spread of virus than the more limited contact in the school. All siblings of infected children became infected. Of the parents who were not protected by the presence of Type I neutralizing antibodies, 93 per cent became infected, confirming the high invasiveness of the virus usually noted in such family groups.

Investigation of a third school in

which a known carrier of the virus was found, however, failed to reveal any spread of the virus, indicating that the usual high invasiveness of the virus may be modified under some circumstances.

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Distilling the Annual Meeting

For the sixth consecutive year Marcus Rosenblum and his group of editors will do a round-up of the Annual Meeting of the American Public Health Association in Kansas City for an early 1956 issue of Public Health Reports. Begun in 1951 for the 1950 meeting in St. Louis, this more-than-summary gives to the entire public health profession the meat of each year's meeting. And to the historian it will be a mine of information on the ever-changing face of public health. The Journal is able to publish about 40 per cent of the papers and reports presented at the Annual Meeting; other publications carry many. Public Health Reports is the only place where, between two covers, is found the essential kernel of each Annual Meeting paper for which the author supplies a manuscript.

"Metropolis"—What City People Think of Their Medical Services

EARL LOMON KOOS, Ph.D., F.A.P.H.A.

The people's comprehension and acceptance of their available community health services is placed at the middle point in this penetrating look into five aspects of comprehensive medical care. This positioning is fortunate for two reasons: public health administration cannot be disassociated from its close relatives and each of the five is affected in some part by the people's attitudes toward the other four.

"Metropolis" is a city of approximately 350,000 population located in the industrial northeastern United States. It has a medical school, a half-dozen approved hospitals, a full complement of medical specialists, a sprinkling of general practitioners—and the usual assortment of quasimedical manipulators, in spite of whom the American people seem to survive. Its expenditures for hospital facilities and services are at least average and its public health services are certainly above average. Its foreign-born and Negro populations are not disproportionate in either size or characteristic. It is a city characterized by some sophistication, and it is proud of that fact. Metropolis is probably not entirely representative of cities of its size, but it is surely not so different as to make the findings of this study meaningless.

This study was concerned with an economically stratified but randomly selected sample of 1,000 families. Sampling was centrally controlled and was based upon decennial census city-block data, aerial survey maps, and city directory listings; the characteristics of the sample were not markedly different from those of the city's total population.

As in the case of Regionville,[1] the findings are reported upon the basis of the family's membership in one of three social strata. These are designated, for present purposes, as Classes I, II, and III, in descending order of socioeconomic position in the community. Here, too, X^2 was used to ascertain the significance of the relation between what people thought and did about health and their socioeconomic position.

Incidentally, the term "medical services," as used here, is broadly interpreted and includes not only the paramedical team but such other services as are used by the population—whether within the professional groups or not. Also, this whole research project centers upon the philosophy that health is the concern of all members of the community and not solely that of the medical profession.

We can report briefly upon only five aspects of the total medical care program.

Medical Care

What Did Metropolis Think of Its Medical Care?—There was, surprisingly enough, little criticism expressed re-

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This paper was presented before the Medical Care Section of the American Public Health Association at the Eighty-Third Annual Meeting in Kansas City, Mo., November 16, 1955.

This is a first reporting of one portion of a study of urban health attitudes and behavior conducted under grants G-3221 and G-3221c (National Institutes of Health). Other portions of the study dealt with morbidity experience and the use of resources for medical care; all are to be reported as a unit in book form at a later date.

garding the cost of medical care. Only 19 per cent of the respondents believed that medical care cost too much and these were distributed among all three social classes. From the content of the interviews it was evident that costs were thought not to be out of line with the general high cost of living.

Pronounced dissatisfaction with the medical care as available or received (and these two are closely related) was found in only 17 per cent of the interviews. There was a significant difference among the social classes, however, with dissatisfaction, as might be expected, found among those families which made use of nonmedical personnel in the treatment of illness. This is not to say, however, that there was no dissatisfaction with certain aspects of medical care, for special criticisms were equally in evidence among all three social classes. Fifty-one per cent of the respondents criticized the physicians of Metropolis for being unwilling to make house calls, or for the counterpart—the insistence of the physician that a sick individual be brought to the office or taken to the hospital for examination in all but the most serious cases. Dissatisfaction was expressed, too, in 47 per cent of the responses with the physician's handling of his office practice—with "having a two o'clock appointment and having to wait until three-thirty to see him."

The greatest criticism centered, however, upon the nature of today's patient-physician relationship. Sixty-four per cent of the replies indicated that modern, technic-centered medical practice lacked the human warmth of the old-time general practitioner (who possibly knew less about medicine but more about his patients). Those who are defensive regarding criticisms of modern medical care have been known to charge that this attitude exists only among the older age groups who view the passing of the family doctor with nostalgia. Our data do not bear this out, for the respondents in the families with husbands under 40 years of age were even more definite in this criticism than were those in the older age group. In the words of a young Class II matron: "We're new at this (raising a family). If we could feel that we mean something to Dr. ——, I'd be happy with him. But I'm sure he has to look at baby's history, or have his nurse tell him who we are, so he'll know what to call me. . . . It's like running through an assembly line to go to his office. . . . I'm sure, though, that he knows his medicine—from that point I'm satisfied."

We can probably best sum up the position of the people of Metropolis regarding their medical care in these words: they tend to be satisfied with what they get and to accept its cost, but they dislike the way it is provided.

It is futile to belabor the physicians of Metropolis for providing an office-centered and impersonal type of medical care, for they are very often caught in a social matrix not of their own making. It should not be futile, however, to suggest that the physician alter his technics and attitudes—in so far as is humanly possible—in order to provide what the people feel they need and want from medical care. Certainly, the direction of such a change is in accord with the current trend in medical education,* and with the developing emphasis upon the psychosomatic aspects of medical care.

Hospital Care

What Did Metropolis Think of the Care Provided in Its Hospitals?—In answering this question from our data the picture seems to be almost the reverse of that presented in the preceding

* The growing emphasis in Corneli, Tulane, and other medical schools upon a family-centered type of medical education.

section. Hospital costs were believed to be too high, in 82 per cent of the answers, and there appeared to be no mitigating factors so far as these respondents were concerned. Equally important, however, was the pronounced unfavorable reaction regarding the care given by the hospitals. This negative attitude was confined to no one hospital, nor was it significantly associated with any one socioeconomic stratum. Seventy-one per cent of the respondents believed the hospital care available to them to be unsatisfactory, but many then qualified their response, as is illustrated in the following abstract from an interview: "I don't say our hospitals don't turn you out alive—at least they most often don't kill you—but the way they treat you while you are in their hands is pitiful. . . . I was in —— Hospital for four weeks last spring. They didn't do anything to hurt me, but they certainly didn't do anything to help me psychologically to get well. . . . I can't put my finger on it, exactly. I think what I'm trying to say is nobody just gave a darn about me as a person. I was just somebody filling a bed."

The uncertainty expressed here as to what was undesirable about the care received was characteristic of eight out of 10 of the respondents who believed hospital care to be inadequate. Some were able to identify particular events, or to name persons who caused them to feel as they did; the failure to receive a prescribed treatment on time, or the crotchety behavior of a nurse or aid, are examples. Others, and they were in the majority, could only report a virulent dislike for the care they had received or would expect to receive without being able to pinpoint the cause of their attitude.

Further discussion in each interview, using open-end questions, did elicit some data which seem important. It appears, for example, that the hospitals' changing social structure—in which the old and relatively simple hierarchy of doctor-nurse-orderly-kitchen maid has been replaced by one including all manner of aides, technicians, floor clerks, and so on—has created confusion and frustration for the patient and his family. Nursing, in the old sense of the word—a highly personal one-to-one relationship—appeared from the data to have been replaced with a highly specialized division of labor in which the patient had an unrecognized and sometimes an uncertain place. The same respondent quoted above had this to say: "Now that you get me to talk it out, maybe I see what disturbed me. It was that I never knew exactly who did what for me. . . . If I rang my bell, someone came and then said, "I'll have so-and-so do that." But maybe so-and-so never came, so I was just left to lie there."

Here, too, it is necessary to admit that the hospital—as well as the physician—is caught in the coils of an advancing medical technology, as well as faced with pressing problems of labor and economics. But it is also necessary to state our belief that many of the ills current in hospital-patient-family relations are present simply because, as the respondents imply, the patient has been somehow forgotten in the course of hospital progress.

Since the two topics just discussed are somewhat different from those which are to follow, we may well look briefly at their implications. Whether or not the people of Metropolis have favorable attitudes toward the care afforded them is important. There is no place in modern medical care for "the devil take them if they don't like what we have to offer" attitude on the part of the paramedical team. If the patient's needs are to be met, if he is to be kept healthy or returned to health—these can be accomplished only if he has a favorable relation to the sources

of this medical care and some accepting understanding of what is being done to and for him. The data in other portions of the study strongly imply that many illnesses go untreated and the patient and his family muddle through to an unsatisfactory solution of a health problem simply because of their negative attitudes which inhibit the use of modern medicine.

Public Health Services

What Did Metropolis Think of the Care Provided by Its Public Health Personnel?—Metropolis has a health department upon which it spends considerable money and to which it could point with pride; its services, also, were of such a nature that they reached into all levels of the population. Despite all of these qualifications, the data show that there was no great consciousness of the value, the effectiveness, or even the functions of the health department. This ignorance, furthermore, was proportionately distributed among all three social strata.

More than two-thirds of the respondents in each of the classes viewed the health department's functions as solely those of a health police force. Such functions as "keeping the water pure," "being sure that sewage is taken care of," "quarantining people who have infected (sic) diseases," "being sure that the restaurants are clean," etc., were interpreted by respondents in all three classes as the only functions of the health department. (Were the director of that department responsible only for such activities in Metropolis, his job would indeed be a much easier one.) The other and more positive (although less dramatic) functions—promoting and coordinating the health functions of the schools and other agencies, educating special groups, etc., were apparently unrecognized by the very public which supported them through taxation. This seems to indicate that Metropolis views its medical care in a very limited way—as simply a matter of physician's services, hospital care, and certain policing functions.

Time and again, Haven Emerson, M.D., and others have raised questions in meetings such as this as to why we have not progressed farther and faster in our community health programs in all of the 48 states. May not one of the answers be found in these data? If the population of a sophisticated urban community of better than average economic status is as devoid of knowledge of its health department's activities as these data indicate, we may well expect a similar or greater lack of appreciation of the health department's functions—and the need for them—in communities with less advantages.

The reverse of the above is equally significant. When presented with a question regarding any health needs which were not being met but might be met through health department activities there was a decided lack of fruitful answers (only 2 per cent in Class I, 3 per cent in Classes II and III), and the needs suggested were already being met, at least in part, in a majority of cases. These findings suggest either a magnificent complacency about the health of the community, or an acute unawareness of what the term health really means, or an unawareness of what public health personnel have to offer. Any of the three gives professional health workers the right to be disturbed.

Nonmedical Health Care

What Did Metropolis Think of the Quasiprofessional Health Care Provided by Nonmedical Personnel?—Since people do turn to nonmedical and quasiprofessional people for help in meeting their health needs, it is legitimate and important that we understand how these extramural services are regarded. In

the present writing, the greatest importance lies not so much in the actual care given, however unscientific or damaging it may be, for this care is not numerically too important—only 9 per cent of the families were reported in this category—but in how the total population regards these services. For this regard constitutes, in our opinion, something of an index of how the total population conceptualizes its health needs and services.

First, the data show that the use of nonmedical personnel, in both the treatment of illness and in its prevention, was a phenomenon confined primarily to Class III, with very little use by Class II, and practically none by Class I. The data suggest, as did those in the Regionville study,[2] that the use of such personnel was not primarily for economic reasons, but because of the psychological values which the patients appeared to gain from such care. In other words, the anonymity characteristic of the care in teaching clinics and outpatient departments and the impersonality of the physician's office (especially as reported by Class III respondents) were in sharp contrast to the care afforded by the nonmedical practitioner.

The real importance of the data in this section seems to lie, however, in the noncritical attitude, especially of Classes I and II, toward such care. It had been hypothesized that these classes would reject the idea of such care being available and on a variety of grounds. Actually, 73 per cent of Class I and 67 per cent of Class II respondents either knew nothing of such care (and therefore had no attitude regarding it) or saw no reason why it should be strictly controlled or prohibited. This seems, again, to mean that a large portion of the population of Metropolis is either indifferent to standards of medical care as they relate to the total population, or that people lack the background for a critical evaluation of medical care. If adequate medical care is to be the concern and responsibility of the whole population, rather than of the medical profession alone, these findings give us cause for reflection—and for some form of educational activity.

Health Insurances

What Did Metropolis Think of the Nonprofit Services Which Provided It with Insurance Against Medical and Hospital Costs?—If the family is to be bulwarked against the economic pressures of medical services in a satisfying manner, the data on this topic are important. (Metropolis has an unusually high participation in both Blue Cross and Blue Shield because of the nature of its industrial organizations.) Seventy-eight per cent of the respondents reported satisfaction with Blue Cross, but only 49 per cent with Blue Shield. The data indicate that the difference lies in the fact that Blue Cross more nearly provides complete coverage than does Blue Shield. Class II (which might be termed representative of the "great American middle class") was especially critical of the fact that there was a considerable gap between what the insurance paid for and what the physician or surgeon charged. "If we're going to be insured, then we ought to be completely covered" was the sentiment most often expressed by Class II respondents. The Class II respondents were also most concerned with the need for the extension of insurance services to include long-time illness (both acute and chronic). This might be expected, since Class I was able to meet its own needs in this regard and Class III had available a number of institutional aids in time of such illnesses. When we realize that nonprofit insurance against the economic costs of illness has been in existence only within our own lifetimes we can view with some satisfac-

tion the coverages already provided. We need, however, to recognize that medical care costs still outrun the protection available and to view realistically John Doe's desire for more protection against the costs of illness.

Implications of These Findings

No social research is worth its salt if it does not give some insights into the workings of society. In this paper we have indicated the findings very briefly and can only sketch lightly the insights.

A first of these insights is known to all of us, but worthy of reemphasis: to wit, that modern medical care, whether in the physician's office, the clinic, or the hospital, appears to move—consciously or not—away from the needs of the consumer of that care. The data show that this population viewed adversely the aura of impersonality which (at least in their opinions) pervaded the highly technical medical care available today. These adverse attitudes were directed toward the physician in his office and toward the hospital and the clinic. These adverse attitudes might be of little importance except for the fact that they are strongly prescriptive or proscriptive for the behavior of the individual when he needs medical care. We recognize, for example, that the pregnant mother should have prenatal care from an early date; we must also recognize that how she and her associates view the available care determines in good measure whether or not she will seek that early prenatal care, and how she will accept its dictates if she does seek it.

It appears that too strong an emphasis cannot be placed upon this aspect of medical care. Certainly there are tremendous advances yet to be made in medicine, but the advances to this point do guarantee to our people preventive or successful treatment of much of what can ail us. (Vital statistics trends are a constant reminder of this fact). If Metropolis is to use its medical care to the full extent necessary for "good" health, then that medical care must be of such a nature (aside from its technical aspects) that it is viewed favorably by the consumer. To create this favorable view demands revisions, not of the technics of medicine (for only rarely does the prospective patient set himself up as a judge of these), but of the technics of human relations in medicine—wherever medicine is practiced.

A second of these insights focuses squarely upon the roles of the physician, nurse, technician, sanitarian, or other member of the paramedical team. Here, I can only repeat what has previously been said in connection with our findings in Regionville. Each of these professional persons accepts his primary role without question, each performs it within the limits of his ability or perception, but each may fail in so doing to broaden adequately the patient's or family's perceptions of what health is, because each may fail somewhat to assume the role of teacher. As a result, the patient still sees the physician as a "healer of symptoms" rather than as what John R. Paul has called a "clinical epidemiologist." [3] And the same appears to be true for the other technical personnel involved in the health activity. Is it not highly probable that the reason the average citizen shows so little knowledge of, or interest in, the broader aspects of health care is because in the physician's office, the hospital, or the clinic he is helped only to focus his attention on the symptom and the services related to it? May it not be that the taking for granted attitude expressed toward public health services and the limited knowledge shown are products of this symptom-focused attention?

This involves, of course the significant question of how much the people

of Metropolis should know about illness—an old question in the world of medicine. We need only to look at any popular magazine today to realize that people are being given information on medical developments—sometimes in an unduly optimistic fashion. It seems inconsistent for the paramedical team to withhold itself from the teaching role, only to have that role assumed by every slick-paper magazine.

Summary

It may be said, then, that Metropolis views its medical services with mixed emotions. It accepts its medical care, in general, without undue reaction against the cost, but with strong reservations regarding the emphasis upon technical medicine given without regard for human relationships. It accepts hospital care, but with strong reservations both regarding costs and hospital-patient relations. It takes for granted public health services and has little recognition of what public health really has to offer in mid-20th century. It views with remarkable complacency the nonmedical services which attempt so feebly to substitute for medical services. In short, despite the excellence of its medical personnel, its hospitals, and its public health department, Metropolis is, in the opinion of these respondents, as yet some distance from the millenium in regard to medical care.

REFERENCES

1. Cf. the rural counterpart of this study, i.e., the writer's Health of Regionville. New York: Columbia University Press, 1954.
2. Ibid., pp. 93–111.
3. Paul, John R. Clinical Epidemiology. J. Clin. Investigation 17:593–641 (Sept.), 1938.

New Department of Preventive Medicine at Vermont

The College of Medicine of the University of Vermont with the assistance of the Commonwealth Fund established a new Department of Preventive Medicine and is developing a Regional Medical Needs Project. The four-year project will begin February 1, 1956. Leon R. Lezer, M.D., assistant professor of preventive medicine at the college, is chairman of a 16-member committee formed to consider the rural medical needs of Maine, New Hampshire, and Vermont. The new department, consisting of a sociologist, medical social worker, public health nurse, health educator, statistician, and secretarial help, will be "the nucleus that will develop a teaching program in comprehensive medical care" and "act as consultants on request to rural areas in Maine, New Hampshire, and Vermont in studying local medical needs." Serving on the committee with Dr. Lezer are commissioners of health, medical society officers, and members of medical college faculties from Vermont, New Hampshire, and Maine.

Public Health Significance of Population Mobility and Change

JOHN J. HANLON, M.D., M.P.H., F.A.P.H.A.

Perspective, an essential ingredient of solid program planning, has its origin in comprehension of the nature of the bases on which the program must be built. One of the bases is delineated here in clear outline.

Population change may be considered to occur in four dimensions: quantitative, qualitative, spatial, and temporal. In other words, how much, what kind, where, and when. It is particularly important that public health workers examine each of these at this stage in the development of their profession and of society. Such examination should be made with two considerations in mind—the significance of public health activities to each of these dimensions of population change, and conversely, the significance of each of them to the present and the future of the public health movement. Successful public health programs of the past have contributed to the development of certain population changes, while in the reverse sense, the changes themselves have given rise to new public health and other social problems. While attention will be devoted essentially to the situation in the United States, of necessity an occasional reference must be made to occurrences elsewhere, since directly or indirectly they bear some influence upon our own domestic scene.

Consider first the quantitative aspect of population change. We find ourselves in the midst of a tremendous population explosion. Thus, while the increase in man's numbers from his earliest beginning to the middle of the seventeenth century was only 500 millions, the mere 300 years since has seen a fivefold increase to over two and one-half billions, and the North American continent has been a major contributor. While originally our growth was due to immigration and a high birth rate, the phenomenal suppression of the death rate has made continued growth possible. After a long and dramatic fall, our birth rate has recently taken an upswing. This, combined with greater infant survival, earlier marriages and conceptions, and extension of the life span leads us to anticipate a national population by 1975 of from 210 to 230 millions.

The foregoing leads logically to a brief consideration of the qualitative aspect of population change. A number of effects have been forthcoming from the public health efforts of the past. The entire age structure of our population has been greatly altered. While in 1900 only 18 per cent of our population was over 45 years of age, by now the figure is 30 per cent. It is estimated that by 1975 about half our labor force will be over 40 years of age. This, coupled with the boom in babies, which is expected to reach an annual six million by 1975, is resulting in the trough of the age distribution curve becoming ever deeper. Further, public health benefits having been made available to all have resulted in particular increases in formerly underprivileged racial, nationality, and social groups. The outcome has been a population which as a whole is healthier, better nourished, longer lived, and better able to take advantage of—as well as contribute to—the improved educational,

social, and economic opportunities.

Spatial population changes which have taken place in recent years have been truly enormous. Internationally they have been of three types: normal migration, flights, and transfers of people. Normal migration, formerly the most significant of these, lately constitutes only a minor proportion of the total. The number reached its peak in the first decade of this century with about 15 million emigrating from various countries to others. Immigration into the United States was greatest during the same decade, with 8,800,000 entering. It reached its lowest point during the 1930's with only about one-half million admitted. This approximately doubled during the 1940's. Flights and transfers of people before, during, and since World War II have reached staggering proportions. The numbers involved in the crusades and in the various great religious pilgrimages which earlier were of such great epidemiologic importance were insignificant by comparison. When one considers the movement to and from Pakistan and India, the Arab countries and Israel, North and South Korea, North and South Vietnam, Nazi Germany and the rest of Europe, East and West Germany, the Soviet bloc countries and the rest of Europe, China and Formosa, and many other areas, the number of transfers, displaced persons, refugees, etc., reaches many, many millions. The immediate and long-range public health implications of this movement and intermingling which has occurred form an enormous subject in themselves.

Spatial change has also been occurring within the United States. This also has been of several types. The westward movement of the center of population which had slowed considerably has recently accelerated as a result of renewed and great movement of industries and businesses to the west, northwest, and southwest during and since World War II. American Negroes, after long years of stabilized location in the southeast, have recently begun to move northward to the industrial centers of the Middle Atlantic and Great Lakes regions. The increasing urbanization of our nation is well known. By now, about 60 per cent of our people live in urban circumstances. The postwar years, however, have witnessed a limited reversal of this movement in the sense of urban, industrial, and business decentralization and suburbanization. An over-all indication of the extent of all of this spatial change in the United States is the fact that during a recent year (April, 1950–April, 1951), 21 per cent of the population moved to a different house. Two-thirds of these moved within the same county, but one-third moved to a different county in the same or a different state.

While spatial change has been used here in relation to more or less permanent relocation of residence, the term temporal change may be applied to a sort of tidal or ebb and flow type of movement of a temporary nature. A number of factors have contributed to the remarkable mobility of our population—the increase in speed and ease of travel, a decrease in its cost, an increase in private vehicular ownership, and an increase in governmental and business activities requiring travel. It is estimated that at least half the population during the past year traveled to some state other than their own. During the same period more than a million United

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States citizens traveled abroad and millions more crossed the borders into Mexico and Canada.

Still another phase of the temporal population change relates to the migrant agricultural worker. In order to meet serious temporary manpower needs, temporary immigration of workers from Puerto Rico, Mexico, and the Caribbean was provided for by recent legislation. Thus in 1951, 191,000 Mexicans were admitted temporarily. Legal entries are overshadowed, however, by the illegal entry of about a half a million so-called "wetbacks" each year.

To this point, only the kinds and extent of population mobility and change have been pointed out. Let us now consider their significance to the field of public health. Even now, we fall far short of the medical and public health personnel and facilities required to meet adequately our current needs. In the face of the considerable population increase anticipated during the next few decades we must obviously plan and pursue most realistically and energetically a program for obtaining the increments of increased personnel and facilities and for the recruitment and financing required. Thus, when considering our current personnel shortages, it is proper to anticipate a need in 1975 of about double the number of public health workers who are now on the job. Increased numbers combined with the qualitative changes that are occurring demand that we reexamine with open minds the current distribution and use of the personnel and facilities which now exist. Therefore, in addition to attempting the completion of the coverage of the nation with local health services, we must reevaluate our ideas about what should constitute basic health services and a basic health staff for the second half of the twentieth century.

The marked recent increases in the numbers of births would make it appear that obstetricians, pediatricians, and the gamut of maternal and child health and protective services not only must remain with us but must expand. At the same time, the continued absolute and relative increase in the older population represents a need and challenge of the first order. It must be admitted that in this vast area of adult health, chronic diseases, and geriatrics we in public health have been doing little more than dabbling about. It is imperative that a more orderly and fruitful approach be developed as soon as possible. This will undoubtedly require much social and administrative experimentation and trial, but the time would appear to be ripe in view of the great public and official interest in and willingness to support research and programs in this direction. In addition, we can observe with increasing optimism the ever-accelerating discoveries and developments relating to the better understanding, diagnosis, treatment, and prevention of many of the illnesses which affect particularly the older population. Beyond this we may with cause expect that some of the results of the preventive and promotive activities which have been making for healthier children and young adults will carry over into their advanced ages. This factor, plus further possible advances in endocrinology and biochemistry, may well result in significantly less senility among the aged of the future.

If we are to meet these problems arising from the quantitative and qualitative changes in the population, two further things must be done. Our professional schools have performed an outstanding service in providing thoughtful leadership and in providing training for individuals to produce the excellent results achieved so far. However, in view of the great population changes and the new world which confront us, it would seem probable that a considerable retooling job is needed in all our

schools. Goals, curriculums, and facilities should be subjected to most careful scrutiny and analysis and, in addition, extensive study should be made of the types of individuals who should be accepted for training and turned out for placement. It may even be necessary to develop some additional or some entirely new categories of personnel to meet more adequately the quantitative and qualitative challenges that are on the horizon.

The other and perhaps most important need which awaits accomplishment is the assurance to all our population that there will be available reasonably adequate medical and institutional care. This has been a difficult problem in the past and significant population increases can only complicate it the more. Granted that its solution is most difficult because of its complex economic aspects and the traditional political and professional philosophies involved. However, it is inconceivable that the people and the medical profession of the United States are not sufficiently ingenious and fair-minded to work out some mutually satisfactory answer.

Spatial population changes in terms of changes in place of residence of large numbers of people have accentuated the maldistribution of medical and public health personnel and facilities. This is evident from the accepted recruitment procedure of the recent past consisting of robbing Peter to pay Paul. A more forthright and equitable approach must be made in terms of shared support of professional public health schools and training centers, development of satisfactory means of transfer of accumulated benefits, such as retirement and pension rights and the dipping down deeply into the high school and college classes for the preconditioning of recruits for future years.

All types of spatial population change bring about great needs and problems in environmental health. Urban and suburban slums must be avoided, new water and sewerage systems must be constructed and old ones reconditioned and extended, housing developments must be supervised, streams and the atmosphere must be protected against pollution by new or additional sewage and industrial effluent, industrial hygiene and safety services must be extended to new plants, and whole new communities must be reeducated healthwise.

The temporal changes which are occurring in our population give rise to somewhat specialized health problems. While our modes of travel have improved tremendously in speed and comfort, provision for the sanitary needs of the traveler lag one or two generations behind. Much remains to be done in order to make both national and international travel hygienically safer in terms of contacts, food, drink, waste disposal, and tourist education. In this regard, it is significant to note the recent birth of a new specialty designated emporiatrics—the science or the study of the health of the traveler.

With temporal shrinking of our world there would appear to be a need to reemphasize global epidemiology. We might be well advised to start teaching our medical and public health students a little more about diseases we have come to consider exotic, and hence have ignored or forgotten. It will be necessary to give more and more attention again to quarantine activities, international standards, and carrier sanitation and examination. Coupled with this is the more evident logic of our rendering technical assistance to certain countries and areas which are underdeveloped in the field of public health. And finally, continued and expanded efforts must be expended in the field of migrant hygiene through a complete national program of selection, examination, immunization and treat-

ment, and supervision and housing.

It is not within the purview of this discussion to consider the relationships of population zenith to ultimate adequacy of national or world resources. Public health workers must recognize, however, that, prior to the eighteenth century, uncontrolled mortality was the chief deterrent to population growth and that the tremendous upsurge of population since then has been due in largest part to the development and application of modern medical and especially public health science. This has made us the chief targets of increasingly vocal pessimistic neo-Malthusians. Suffice it to say that, these alarmists to the contrary, there appear to be overriding indications that the danger of national or world population reaching the maximum supportable by their potential resources seems remote. All but the most pessimistic estimates of the amounts of land and other sources of food which could be brought into use, and of the possible increases in agricultural yields, indicate that it is technically possible to feed much larger populations. Despite the current interest in the potentials of fissionable materials, the sun is still our chief source of energy—and we are using about one-tenth of one per cent of what is available to us.

The difficulty is that public health workers have been too successful in relation to other fields. In the past, industrial development, land and natural resource conservation, government, housing, education, and many other areas of activity simply have not been able to keep up with the advances in the field of public health. Instead of being ashamed of our successes, or trying to explain them away, we should challenge the alarmists to exert complaint and pressure where it more aptly belongs—in areas which have not kept up with us. At the same time, let us show our willingness and ability to work with those in other fields to assist in the solution of their problems. We cannot afford to let up on our efforts. In view of the current and impending dramatic social and scientific changes, this would be the worst possible time to do so. In fact, the various great changes in the population offer us all the more challenge to consolidate our past successes, to evaluate our present actions, and to anticipate our future fruitful action in new fields. If we are not big enough to meet the challenge, then what has been accomplished so far may represent merely a transient phenomenon in the history of mankind. If we are big enough, future populations will be forever in our debt.

Cerebral Palsy Research Foundation

A Cerebral Palsy Research and Educational Fund has been established jointly by United Cerebral Palsy and a group of industrialists. Its purpose is to accelerate the research attack on the complex problems of the disease. The foundation is seeking to develop sources of research funds in addition to those allocated for research by UCP. The parent organization bears all administrative costs of the foundation and is making available the services of its volunteer boards and staff.

Both of these organizations have a common chairman of the board and president.

Motivations of Persons Electing Public Health as a Career

WILLIAM W. STILES, M.D., M.P.H., and LOIS C. WATSON, R.N.

Why do students decide to make a career of public health or medicine or nursing or dentistry or pharmacy? Some revealing answers to these questions are set forth here.

What motivations cause persons to elect or reject public health as a career? This question was posed by W. P. Shepard, M.D., chairman of the Committee on Professional Education of the American Public Health Association, in March, 1951. Acting upon his suggestion, representatives of the professional schools of the University of California at Berkeley and San Francisco undertook a study along these lines using the students enrolled in the Schools of Dentistry, Medicine, Nursing, Pharmacy, and Public Health as test subjects.

The specific objectives of this study were:

1. To discover the relative importance of certain factors that may influence an individual's choice of a profession in the health sciences.
2. To decide whether there is a significant general agreement in the motivating factors of persons who have chosen a specific profession.
3. To determine if the motivating forces remain the same throughout the student's professional training and development and if changes do result, to what extent and in what way.
4. To find out when the principal forces that persuaded students to select their career became operative.
5. To determine the usefulness of these motivating factors as guides in counseling students and personnel, and as the basis for a program designed to appeal to those persons who would be most competent and effective for a specific health career.

Description of the Test

A special test was devised to provide the information regarding possible motivations of students in professional schools. This test consisted of a set of 26 white IBM punch cards upon which separate statements of possible motivations were printed. The questions were identified only by holes appropriately punched in the cards; moreover, the cards were arranged in random order in the set. Included in each set was a colored punch card on which the student wrote his name and the date, and a white tabulator dividing card enabled the student to list any motivating factors which pertained to himself but were not printed on any of the white punch cards.

Each student received the following sheet of instructions along with the complete set of cards:

1. Please handle these cards carefully: do not fold, and do not fray nor abrade the edges. Count the cards distributed to you;

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This paper is a report to the public health profession on behalf of a committee which includes: Dr. Stiles, chairman (public health); Dr. Wendell L. Wylie, (dentistry); Dr. Robertson Pratt (pharmacy); Dr. John B. Lagen (medicine); and Bernice C. Hudson (nursing). Other reports in appropriate journals are being published.

This study was financed by research funds of the University of California and in part by the American College of Dentists.

you should have one colored card, 26 white punch cards, and one 3 x 5 card.

2. On each of the 26 white cards you will find a statement which is a possible reason or factor governing a choice of profession or vocation. Read each card, and as you read sort the cards into two piles: those which are significant factors in your choice, and those which are totally irrelevant. Even if a statement seems only remotely to have been a deciding factor, place it with the other "significant" cards.

3. Place the "irrelevant" or "unimportant" pile aside. Then pick up the pile of "significant" cards. Sort these into order of importance, placing the most significant card on top, and so on. If there are any additional significant factors which are not adequately covered therein, please list them on the 3 x 5 card. Do not write on any of the white punch cards. When this has been completed, put the pile of "significant" cards on top of the pile of "irrelevant" cards using the 3 x 5 card as a divider between the two piles. Place the colored card with your name on it on the very top of the pile which will then be collected with this sequence maintained.

The survey was conducted by assembling the selected class or group from a specific professional school and giving each student a set of the IBM cards, the name card, the divider card, and the sheet of instructions. The person administering the test supplemented the written instructions by reading them aloud to the students. Thus, the procedure to be used by the students in sorting the cards was fully explained and consequently there seemed to be no difficulty in understanding what was desired. A definite effort was made to avoid any variables, such as associating a particular place, subject, person, or occasion with the test. An attempt was also made to keep the classes from hurrying through the test, which was easily completed in 20 minutes. Any incidents departing from the established procedure were noted, and also the general attitude of the students in regard to the test.

The numbers of students in each group that have been surveyed since the program was instituted in June of 1951 are as follows:

Freshman and senior dental students	306
Freshman and senior dental hygiene students	37
Freshman and senior medical students	401
Freshman and senior nursing students	251
Freshman and senior pharmacy students	498
Graduate public health students	295
Total	1,788

Tabulation and Analysis Procedures

Following completion of the test by the students, the IBM card sets were processed and tabulated at the university Computor Laboratory. The results for each group were returned in the following forms: (1) tabulation of the frequency of each topic by "breakdown" according to choice position; (2) a listing of the deck code numbers with corresponding selections for those decks; and (3) the colored name cards with the individual results punched into each card.

The object of the analysis was to assign each of the selected topics a value which was ascertained by the number of times it was selected by the class (Actual Value) and to assign to each topic a single value which was found by taking into consideration how many times it was selected and also where on the scale of choice selections occurred (Relative Value).

Actual Value—The first step was to total the number of times each item occurred, without regard to its choice position on the tabulation sheet. This value represented how many people considered themselves influenced by the topic, without telling how great a motivating force it was.

Relative Value—When the actual frequency of the topics had been found a method of measuring the intensity of the motivating forces on the individuals was used. In order to weigh the topics

in regard to choice occurrence an arbitary value schema was established, which was based on the assumption that there was little significant value to career-influencing factors which were considered by an individual to be eighth or more in importance for influencing his choice, inasmuch as only a few students chose more than seven topics. In like manner, very few chose fewer than four topics. Thus the first seven choices were considered as the important ones in this analysis. The numerical values assigned to the choices are as follows:

Choice	Assigned Value
1	7
2	6
3	5
4	4
5	3
6	2
7	1

The frequency with which each topic appeared in each choice position was multiplied by the value assigned to that position. This gave us a value which took into account both the frequency of the topic and the choice position value. The total relative value of each topic was then arrived at by summing up the products of the seven frequency-value multiplications. In this way we were able to determine the relative position of each topic when it was compared to the value of the other topics computed in a similar manner. As an example, note the following hypothetical table constructed for only one topic:

Choice Position	Assigned Value (x)	Topic Frequency (f)	fx
1	7	6	42
2	6	3	18
3	5	2	10
4	4	1	4
5	3	0	0
6	2	0	0
7	1	1	1
			Σfx 75

The procedure used in calculating the Σfx, as in the above, was repeated for each topic and a relative distribution was then set up on a highest to lowest rating.

Adjusted Relative Value—Since the relative values ascertained for each of the selected topics were proportional to the number of persons in each specific test group, direct comparison of the relative values of different sized groups was not valid. An adjustment was needed which would standardize each group and allow the varying sized test groups to be directly comparable.

This adjustment was made by assuming the highest single relative value of any group to be 100. In this way the maximum relative value obtained by any topic, regardless of the size of the group, could only be 100. From this point, we adjusted the values of the other topics by finding a common number (Adjustment Multiplier) for each specific group. By multiplying the other 25 topics by the specific adjustment multiplier of that group we obtained a new set of relative values or adjusted relative values for each topic. The new range of values for the specific group was proportional by a factor (Adjustment Multiplier) to the original value range. Upon adjusting another group, it was possible to directly compare the two groups validly.

Results

The following are the motivation test topics exactly as printed on the IBM cards. Here they are listed in their order of choice by the 1,783 students combined:

1. Native interests and aptitudes which make it natural to pursue this field in preference to all others.
2. Expectation of a substantial financial income and economic security.
3. Expectation for advancement in position, social prestige, or responsibility.

4. This vocation allows one to meet many other people.
5. Influence of a person actively engaged in this field.
6. Previous experience in an occupation closely related to your expected career.
7. This vocation permits one to work independently of other people.
8. Some significant factor which has not been adequately covered in the other categories.
9. Working conditions and hours seemed especially desirable.
10. An agreeable opportunity which materialized unexpectedly.
11. Close relationship of this vocation to another which could not be attained for some reason.
12. Vocational guidance by a professionally trained counselor or special tests.
13. Influence of a particular teacher or a class in school.
14. The chance to avoid or delay some less desirable experience.
15. Some environmental or geographic factor, such as opportunity to travel or residence in a community where the occupation was the major interest of almost everyone.
16. Influence of a relative or of a close friend who is not in this or related fields but has always wanted to be.
17. An impression gained from reading a book, pamphlet, or other literature.
18. Influence of a relative or of a close friend who has not himself had aspirations in the field.
19. Because of previous training, it now seems impractical to prepare for anything else.
20. Experience gained while in military service.
21. An existing setup, such as a partnership with relative or friend which made it advantageous to follow a given career.
22. Limited financial resources or time for schooling and technical training.
23. Some health, physical, or age limitation.
24. An opportunity to fulfill one's financial needs immediately.
25. Pressure by parents or by circumstances not of one's own choice.
26. An impression gained from moving pictures or from a radio or television program.

The relative importance of these motivation test topics is illustrated by the solid line in Figure 1 below.

Superimposed upon this graph is one showing the choices of the public health students tested. It was apparent that the graduate students in public health rated the following factors to be of much greater significance than those chosen by students enrolled in the other professional schools:

6. Previous experience in an occupation closely related to your expected career.
10. An agreeable opportunity which materialized unexpectedly.
11. Close relationship of this vocation to

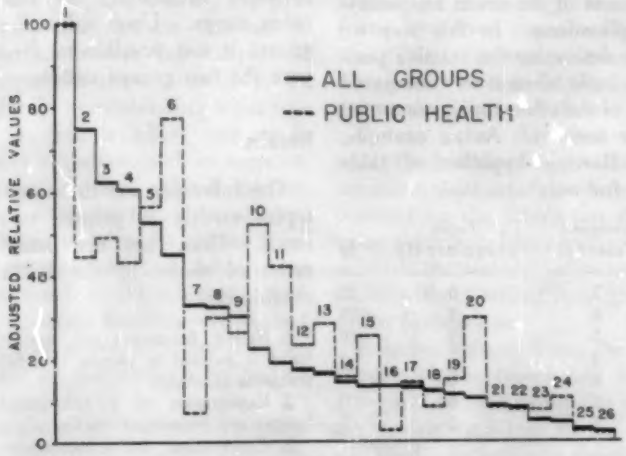

Figure 1

another which could not be attained for some reason.

13. Influence of a particular teacher or a class in school.

15. Some environmental or geographic factor, such as opportunity to travel or residence in a community where the occupation was the major interest of almost everyone.

20. Experience gained while in military service.

Those motivating test topics which appeared to be considerably lower were as follows:

2. Expectation of a substantial financial income and economic security.

3. Expectation for advancement in position, social prestige, or responsibility.

4. This vocation allows one to meet many other people.

7. This vocation permits one to work independently of other people.

16. Influence of a relative or of a close friend who is not in this or related fields but has always wanted to be.

It is noteworthy that the general patterns of the choices by each group were fairly consistent throughout the four years of this study. There was little difference between the choices of the public health students at the beginning and ending of their academic year; whereas there were rather marked differences between the choices of other professional students at the beginning of their freshman year and the ending of their senior year. Of course, some of these differences may be explained by the fact that different generations of students were studied, for it was not possible to examine the same students at the beginning and ending of their freshman and senior years.

The test topic designated as No. 8 in the list, "Some significant factor which has not been adequately covered in other categories," was expected to call forth some interesting results. Most of the students' statements, however, were merely a revision of one of the printed test topics and were not considered to be of particular significance. Only one additional topic caught our eye. This was the thought expressed by no more than a dozen students along the line—"This vocation is one which is a real help to humanity."

Summary

Five factors seemed to be of relatively great importance in determining the individual's choice of a professional career in the health sciences: test topic No. 1 native interests and aptitudes which make it natural to pursue this field in preference to all others; No. 2 expectation of a substantial financial income and economic security; No. 3 expectation of advancement in position, social prestige, or responsibility; No. 4 this vocation allows one to meet many other people; and No. 5 influence of a person actively engaged in this field.

In contrast to these five choices made by a combination of all the students under study, those selected by the graduate students in public health were: test topic No. 1 native interests and aptitudes which make it natural to pursue this field in preference to all others; No. 6 previous experience in an occupation closely related to your expected career; No. 5 influence of a person actively engaged in this field; No. 10 an agreeable opportunity which materialized unexpectedly; and No. 3 expectation for advancement in position, social prestige, or responsibility.

Although the details are beyond the scope of this paper, there was abundant evidence in our study to indicate that the factors which motivate one professional group of students differ materially from the factors which motivate other professional groups. Moreover, these differences were consistent enough throughout our study to give us confidence that they were significant differences.

Again, the details are beyond the scope of this paper, but we found from our study that the motivating forces did

not change materially throughout the student's professional training and development. There were a few exceptions, however, the most notable being the progressive importance of the factor "Expectation of a substantial financial income and economic security." This was not as conspicuous among the public health students at the beginning and ending of their years' work as it was among the other groups of students at the beginning and of their freshman year and the ending of their senior year.

It was our impression from this study that the principal forces which persuaded students to select their specific professional careers were deepseated, extending back into early life. We were also impressed by the importance of some other factors which were contemporary. Thus, students in the various professions, but especially those in public health, may be considered as "opportunists."

Although we have tried to apply our findings as general guides in the counseling of students and personnel in each of the professional fields, we have not attempted to develop any specific programs for recruitment. Instead, we recognize that we are still in the stage of "testing our test." Such testing needs to be refined and extended to many other groups over a longer period of time. It is our hope that this interim report will serve as a stimulus for such endeavors.

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Pediatric Rehabilitation Fellowships

The Children's Division of the Institute of Physical Medicine and Rehabilitation, New York University-Bellevue Medical Center, offers two fellowships in pediatric rehabilitation for pediatricians. Training will be offered in the rehabilitation of children with disabilities resulting from neuromuscular, muscular, and orthopedic conditions.

These fellowships are made possible by funds supplied by the Association for the Aid of Crippled Children. For the training period of one year, beginning January 1, or July 1, 1956, the fellowship stipend is $4,000. Further information from George G. Deaver, M.D., Director, Children's Division, Institute of Physical Medicine and Rehabilitation, New York University-Bellevue Medical Center, 400 East 34th St., New York 16, N. Y.

Comparative Coliform Densities in Water by Membrane Filter Test and by Multiple Tube Technic

JOSEPH A. McCARTHY

Recent reports tell of some of the advantages of the MF over the MPN technic in determining coliform densities in water. This paper reports on research that indicates what some of the still unanswered problems in the new technic seem to be.

Extensive comparisons have been made between the standard multitube MPN method for estimating coliform density and the use of membrane filters. In each of these experiments at least 10 sets of five tubes each in at least three decimal dilutions have been inoculated and in each case the same number of membrane filters has been used with the same dilutions. As usual, MPN values have been calculated from the tubes by the use of the standard table. All the colonies on all the membrane filters have been counted and the number per hundred ml has been calculated by dividing the total number by the appropriate volume. In addition, all filters have been gathered in groups of five and MPN's have been calculated as if each filter represented a tube. Any filter showing one or more colonies exhibiting the characteristic sheen has been considered positive.

Experiment I

The first large comparison was made on water from Haggetts Pond which is the raw water supply of the town of Andover. The water is of such quality that the only treatment necessary is chlorination. Bacterial examinations on successive days before the large-scale experiment was begun had indicated that the coliform content of the water might be too low to give significant results in the experiment and therefore a few milliliters of polluted Merrimack River water was introduced into the sample which was used for this experiment. Twenty-five sets of five-tube MPN's were set up using volumes of 10, 1, 0.1, and 0.01 ml and 125 membrane filters were prepared on each of the first three dilutions. Previously many comparative runs had been made with membrane filters on this water using several different media and it had been found that M-HD-Endo medium without preliminary enrichment gave coliform recoveries at least as great as any other medium or combination of media, and this with greater uniformity, and therefore M-HD-Endo medium with no preliminary enrichment was used in this test.

In Table 1 MPN's were calculated for the multitube method from the 24-hour presumptive, the 48-hour presumptive, and the 48-hour confirmed. Our experience on this water had been that very few cultures were lost in comple-

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Table 1—Tube MPN—Membrane Filter Comparison (Lawrence Experiment Station)

Sample Source—Haggetts Pond
Filter Medium—M-HD-Endo

Fermentation Tube	No. Tubes Positive				MPN/100 ml	
	10	1.0	0.1	0.01 ml	Log Mean	Average
Presumptive—24 hr	125	116	14	5	235	283
Presumptive—48 hr	125	125	59	6	669	801
Confirmed—48 hr	125	125	53	6	587	728

Membrane Filter	No. Filters Showing Sheen			MPN/100 ml	
	10	1.0	0.1 ml	Log Mean	Average
21 hr Incubation	125	88	11		139
24 hr "	125	101	12		182
48 hr "	125	107	21	209	285
48 hr verified	125	107	18	205	274

	Average Count (125 filters)		
	10	1.0	0.1 ml
48 hr	25.93	1.82	0.104
Standard deviation	5.49	1.48	0.330
Lexis ratio	1.08	1.10	1.0
Per 100 ml	259	182	104
Average density	(2,593 + 182 + 10.4) / 11.1 = 251/100 ml		
Arithmetic mean density	182/100 ml		

tion. The MPN averages were 283, 801, and 728 per 100 ml which shows that a very great increase occurred in the second 24 hours. The membrane filters were counted at 21 hours, again at 24 hours, and finally at 48 hours. Counts were made individually by three bacteriologists, all of whom had considerable experience with membrane filters, and a very close agreement was shown between the three counts. The counts presented are the average of the three figures. All colonies appearing only at 48 hours and all other doubtful colonies were verified by transfer to lactose broth.

Computation of MPN's from the number of filters showing one or more colonies with characteristic sheen gave the following MPN's: 21 hours—139; 24 hours—180; 48 hours—a very considerable increase to 285. Very few colonies were lost in verification so that the MPN on the verified count alone was 274. This figure compares very well with the MPN from the 24-hour presumptives from the tube method but is obviously much less than the 48-hour result given from inoculation of tubes.

Counting of individual colonies on all 375 filters gave an average of 25.93 colonies for the 10 ml filters, 1.82 for the 1 ml filters, and 0.104 for the 0.1 ml filters; this gives for 100 ml, figures of 259, 182, and 104. The average density for all the filters obtained by dividing the total count by the volume of water used was 251 per 100 ml. The arithmetic mean density of the membrane filter MPN's plotted according to Thomas was 182 per 100 ml.[1]

The standard deviations were determined for each group of 125 and the Lexis ratios were then calculated and found to be very little greater than unity.

For the moment, since this work is largely a comparison of tube MPN vs membrane filter MPN, no consideration has been given to positive bias [2] reportedly inherent in the multitube MPN estimate. In reporting some of the later experiments, the effect of this bias will be shown.

Experiment 2

The finding of relatively lower numbers in the 1 ml and 0.1 ml portions as compared to those in the 10 ml portions had been previously noted in earlier work. It was felt however that a closer agreement should have been found. It seemed probable that the discrepancies were at least partly due to the failure of individual colonies to exhibit the sheen which has been accepted as a necessary characteristic. There is also the possibility of inhibition of the weaker colonies by the media or by the various mechanical steps in the technic. The next experiment therefore was run to show that a closer agreement between tube MPN's and filter MPN's should have been obtained using the method of calculation described above. In this new experiment 10 sets of tube MPN's were inoculated from a pure culture of Escherichia coli in three different serial dilutions and 50 tryptose-glucose agar plates were planted in the same dilutions used in the tubes.

From this experiment the arithmetic mean of the tube MPN was 3,800 as compared with 2,980 from the MPN calculated from the agar plates. The corresponding log means, probably in this case a better method of comparison, were 3,010 and 2,710. The 50-tube MPN's were calculated and found to be 1,745 for the tubes and 1,718 for the plates. The total number of colonies found on the plates divided by the total volume inoculated gave a figure of 4,344 per 100 ml. Table 2 also shows

Table 2—Tube MPN—Agar Plate MPN Comparison

Source—Dilute Suspension of Pure E. coli
Medium—Plates—Tryptose-Glucose Agar—24 hr

Fermentation Tube	No. of Tubes Positive			MPN/100 ml	
	1.0	0.1	0.01 ml	Log Mean	Average
	50	47	10	3,010	3,800
Agar Plate	**No. of Plates Showing Colonies ***			**MPN/100 ml**	
	1.0	0.1	0.01 ml	Log Mean	Average
	50	48	6	2,710	2,980
	Average Count on Agar Plate				
	1.0	0.1	0.01 ml		
	43.4	4.42	0.40		
	MPN Approximation				
	50 tube		50 plate		
	1,745		1,718		

* All plates showing less than four colonies were rechecked for E. coli by fishing colonies.

that on the 1 ml plates a total of 2,168 colonies were found as compared with 221 on the 0.1 ml plates.

This experiment seems to show that it is possible to obtain a very close comparison between a liquid tube method and a method using a fixed medium.

Experiment 3

The next experiment was run to investigate other possible inhibiting factors in the technic. In this case a dilute suspension of pure culture of Aerobacter aerogenes was used. Fifty membrane filters were prepared by filtration of 1 ml each of the dilute suspension. From the 50 filters, 10 each were selected at random and placed on pads saturated with: (1) M-enrichment broth, (2) M-enrichment broth to which had been added the solids equivalent to those in a one-third strength standard M-HD-Endo preparation, (3) M-broth with 67 per cent equivalent, (4) M-broth with 100 per cent equivalent, and (5) standard M-HD-Endo medium. At the same time, 10 plates were poured each with 1 ml of the culture and an agar made by adding 1.5 per cent of bacteriological agar to M-enrichment broth.

The average count of the agar plates was 12.4. The average of the membrane filter with No. 1 preparation was 12.8 per plate. This of course is a very excellent agreement. As can be seen from Table 3 the results with the other preparations were all decidedly lower. The results of the experiment indicate: (1) membrane filter technic is capable of concentrating aerogenes without loss; (2) with suitable nutriments such organisms will grow to visible size; (3) no toxicity seems to be associated with the membrane filter itself; (4) there seems to be no mechanical destruction by filtration; (5) the environmental conditions in a fixed medium and in a liquid medium seem to supply equally satisfactory environment for the development of such bacteria; (6) an increasing inhibition is shown with increasing amounts of a discriminatory medium such as M-HD-Endo.

Table 3—Effect of Selective Media on the Recovery of A. aerogenes

Plate No.	Enrichment Broth	Enrichment Broth + 33 Per cent M-HD-Endo	Enrichment Broth + 67 Per cent M-HD-Endo	Enrichment Broth + 100 Per cent M-HD-Endo	M-HD-Endo	Enrichment Broth Agar
1	16	6	4	1	8	10
2	13	11	4	3	2	18
3	8	10	2	1	3	17
4	17	6	4	1	4	8
5	14	13	8	1	5	11
6	15	3	1	2	2	11
7	12	7	3	1	6	16
8	16	7	4	3	2	7
9	8	5	2	3	1	14
10	9	4	4	2	5	12
Total	128	72	36	18	38	124
Average	12.8	7.2	3.6	1.8	3.8	12.4
Per cent Recovery		56.3	28.1	14.1	29.7	

Table 4—Tube MPN—Membrane Filter MPN Comparison

Source Haggetts Pond
Filter Medium M-Enrichment Broth—2 hr and M-Endo Medium

Fermentation Tube	No. of Tubes Positive			MPN/100 ml	
	10	1.0	0.1 ml	Log Mean	Average
Presumptive—48 hr	47	13	2	34.1	42.4
Confirmed—48 hr	47	11	1	30.3	35.3

Membrane Filter	No. of Filters			MPN/100 ml	
	10	1.0	0.1 ml	Log Mean	Average
Showing sheen after 21 hr	34	9	0	11.9	14.1
Coliform presence shown by secondary treatment	13	0	0		
Total	47	9	0	26.5	35.7

	Average Counts (50 filters)		
	10	1.0	0.1 ml
	2.18	0.20	0
Average count/100 ml	21.8	20	0

Another experiment was run with a dilute pure culture of E. coli and similar results were obtained, although there was slightly less inhibition.

Experiment 4

The next experiment was another large-scale sampling of water from Haggetts Pond, using 10 sets of five tubes each of 10, 1, and 0.1 ml and 50 membrane filters on each of these dilutions using a two-hour M-enrichment broth followed by M-Endo medium. The same method of calculation of MPN's was employed.

As shown in Table 4 the membrane filter results were considerably lower than those obtained by the confirmed tube technic when the results were based on the appearance of characteristic sheen. From each filter showing no colonies with sheen, several colonies were fished to lactose broth. These included colonies with varied appearance, ranging from colonies with very doubtful sheen; red or dark colored colonies showing a definite nucleus, this being the type quite commonly associated with E. coli on an EMB plate; grayish colonies showing disseminated nuclear matter quite similar to those commonly associated with A. aerogenes on EMB plates; to large pink mounded colonies, tiny circular colonies with a whitish halo, and even large entire colonies which were definitely white. Positive coliform characteristics were found from all of these types. When these results were used for classification of positive or negative, 13 additional filters from 10 ml inoculation could be considered positive since these filters presumably should have produced colonies with the characteristic sheen. If these filters are used in calculation of an MPN we now find that the arithmetic mean of the tube MPN and of the mem-

brane filter MPN are almost identical and the log means have a satisfactory agreement.

The sheen colonies were counted on all the membrane filters and the average of the 10 ml filters was 21.8 per 100 and that of the 1 ml 20 per 100, thus again indicating that if only colonies presenting sheen were counted the resulting number would be considerably less than can be demonstrated by other methods.

Experiment 5

The next experiment was on water from Lake Cochichewick which is the raw water supply of the town of North Andover. This lake has a very long storage time and is quite free from fresh contamination. Again, 10 sets of five tubes each were inoculated with 10, 1, and 0.1 ml and 50 membrane filters were prepared from the same dilutions using M-enrichment and M-endo medium.

As shown in Table 5, a 21-hour membrane filter gave an average MPN of 54.2 per 100 ml and the 24-hour presumptive fermentation tubes gave an average of 43.4 which is a satisfactory agreement. But when the 48-hour presumptives from the tubes are used, the MPN average becomes 567. By confirmation this is reduced to 369. As a result of our experience in the preceding experiment where colonies failed to produce sheen, another experimental technic was employed to attempt to obtain maximum response. All filters showing no colonies with sheen were placed in fermentation tubes of lactose broth with sufficient sterile water added to give proper concentrations of lactose and peptone and then incubated. All such tubes showing gas were confirmed in brilliant green and submitted to the completed test. Using the confirmed technic, 18 additional filters from the 1 ml portions and five from the 0.1 ml portions should be considered positive. It is to be noted that only two of the confirmed tubes failed to complete. This gives a total of 33 from 1 ml and eight

Table 5—Tube MPN—Membrane Filter MPN Comparison

Source: Lake Cochichewick
Filter Medium: M-Enrichment Broth—2 hr and M-Endo Medium

Fermentation Tube	No. of Tubes Positive			MPN/100 ml	
	10	1.0	0.1 ml	Log Mean	Average
Presumptive—24 hr	50	14	0	39.6	43.4
Presumptive—48 hr	50	43	24	386	567
Confirmed	50	42	17	272	369

Membrane Filter	No. of Filters			MPN/100 ml	
	10	1.0	0.1 ml	Log Mean	Average
Showing sheen in 21 hr	50	15	3	45.9	54.2
Coliform presence shown by secondary treatment	0	18	5		
Total confirmed	50	33	8	118	132
Total completed	50	32	7	108	116

from 0.1 ml, as compared to only 15 and three originally shown as positive by counting only sheen colonies.

When these confirmed tests are used an average MPN of 132 is now obtained from the membrane filter or well over twice as great a figure as that obtained by counting sheen colonies only.

Not all of the confirmed tests from the tube fermentations were submitted to the completed test. If this had been done, it seems probable that even better agreement would have been found between the two methods.

Experiment 6

In this experiment, an attempt was made to include all the lessons learned in the preceding work. The water used was from Haggetts Pond after very high rains, which could be expected not only to increase the coliform content, but also to bring in many times greater amounts of noncoliforms, and thus give what is believed to be a ratio of noncoliforms to coliforms which is unfavorable for the most efficient use of the membrane filter. From our long experience of frequent examinations of the pond, it is safe to say that probably a very small part or even none of the coliforms washed in by the rains were associated with fresh pollution.

Again 10 sets of five tubes each were inoculated with 10, 1.0, and 0.1 ml portions, and 50 membrane filters were prepared from each of these dilutions using M-enrichment and M-HD-Endo. All fermenting tubes were confirmed and completed. The total number of sheen colonies was counted. All filters showing no sheen colonies were immersed in lactose broth, and all of the

Table 6—Tube MPN—Membrane Filter MPN Comparison

Sample Source Haggetts Pond (after heavy rains)
Filter Medium M-Enrichment Broth—2 hr and M-Endo Medium

Fermentation Tube	No. of Tubes Positive			MPN/100 ml	
	10	1.0	0.1 ml	Log Mean	Average
Presumptive—48 hr	50	50	41	*	*
Confirmed—48 hr	50	50	32	1,030	1,086
Completed—48 hr	50	50	20	576	711

Membrane Filter	No. of Filters			MPN/100 ml	
	10	1.0	0.1 ml	Log Mean	Average
Showing sheen in 21 hr	49	37	4	120	158
Coliform presence shown by secondary treatment of negative filters	1	13	23		
Total completed	50	50	27	789	896

	Average Count, Sheen Colonies (50 plates)		
	10	1.0	0.1 ml
21 hr incubation	9.7	1.01	0.8
Count per 100 ml	97	101	80

Average density $(485 + 55 + 4)/5.55 = 98/100$ ml

* Several indeterminate values made calculation impossible.

Table 7—Tube MPN—Membrane Filter MPN Comparison

Source: Settled Domestic Sewage (0.0005 per cent)
Filter Medium: M-Enrichment Broth—2 hr and M-Endo Medium

Fermentation Tube	No. of Tubes Positive			MPN/100 ml	
	10	1.0	0.1 ml	Log Mean	Average
Presumptive—48 hr	50	50	30	925	1,100
Confirmed—48 hr	50	50	30	925	1,100
Completed—48 hr	50	50	30	925	1,100

Membrane Filter	No. of Filters Showing Sheen			MPN/100 ml	
	10	1.0	0.1 ml	Log Mean	Average
24 hr incubation	50	50	30	913	1,143

	Average Count, Sheen Colonies (50 plates)		
	10	1.0	0.1 ml
21 hr incubation	32.6	5.3	0.44
24 hr incubation	84.2	7.96	0.96

Average density $(4{,}211 + 398 + 48)/5.55 = 839/100$ ml

Completed tube MPN average corrected for bias [2]: $1{,}100/1.23 = 894/100$ ml

tubes then showing gas were also confirmed and completed. As a result of this technic, the single 10 ml filter which showed no sheen colony gave a completed positive test; all 13 1.0 ml filters which had not produced sheen colonies gave completed positive tests and 23 of the 46 0.1 ml filters were shown positive by the completed test.

All of the 10 ml and 1 ml tubes were found positive by the presumptive, confirmed, and completed tests. Forty-one tubes inoculated with 0.1 ml showed gas; of these 32 confirmed, and 20 completed. This large difference between the presumptive and the completed tests is quite different from our normal experience with this water, confirming the introduction of abnormal conditions into this water from the heavy rains.

As Table 6 shows, the log mean of the MPN's calculated from the completed tests on the tubes was 576. The log mean calculated from the filters showing sheen colonies was only 120. The log mean of all the filters, including those shown to be positive by secondary treatment, was 789, or a sixfold increase. This result is higher than that shown by the completed tube test, but the actual difference is that seven more positives were shown in the 0.1 ml filters than in the tubes receiving the same volume, so that there is shown a total of 127 positives against 120, a difference well within the probable limits of error of the methods.

The average density of sheen colonies is only 98/100 ml.

Experiment 7

The next experiment was run with settled domestic sewage, suitably diluted. As shown in Table 7 an exact

agreement was shown in the number of positive tubes and of filters showing definite sheen, after 24-hours' incubation. It will be noted that the additional incubation from 21 to 24 hours gave a very large and significant increase. Secondary treatment, as described above, did not change the results. The slight difference between the averages and the log means is due to difference in the arrangement of the sequences.

The average density of the actual count from all the filters gives an estimate of 839/100 ml. The bias factor imputed to MPN's obviously does not apply to this estimate. If this factor is applied to the average MPN from the tubes the estimate obtained is 894/100 ml, a very close agreement with the average count from the filters. It is my belief that this close correlation is due to the freshness of the coliforms in the sewage, and the relatively low number of other organisms.

Summary

The results of these experiments seem to indicate that neither the membrane filter nor the mechanics of filtration are inhibitive to coliform bacteria.

The discrepancies between the membrane filter and the tube technic appear to increase with the time and distance from fresh pollution, and the difficulty of recovery increases with the ratio of noncoliform to coliform.

Studies of several media indicate that none of those now in use are completely satisfactory for the total recovery of coliforms in all waters. The defects lie in failure to permit growth and failure to permit all colonies to exhibit the characteristic sheen now required at any one period of incubation. The most urgent need in connection with the membrane filter seems to be the formulation of a more satisfactory medium. Further work with pure cultures of the coliform group would seem to be an essential part of the approach to this problem.

ACKNOWLEDGMENT: I wish to express my appreciation for cooperation in this study to Dr. Harold A. Thomas, Jr., the Millipore Corporation, and to the personnel of the bacterial laboratory of the Experiment Station, particularly to John E. Delaney in charge of that laboratory, who contributed much of the thinking involved.

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25 Years of a New England Town Union

The Nashoba Associated Boards of Health in Massachusetts celebrated its 25th anniversary in September. This cooperative unit of 14 towns was started as a demonstration in 1930 and was supported for five years by the Commonwealth Fund. At the end of five years 10 towns voted to continue their cooperative board of health. By 1948 one more town had deserted.

At present there are 16 towns in the union with a population of about 45,000. All but two of the original 14 are back in the association and one of these is reported to be considering return. Currently nearly three-quarters of the $1 per capita cost of the Nashoba health program is raised locally. The Associated Boards hopes by 1960 to meet the total cost of operation locally.

Public Health Nursing and Parent Education: A Pilot Project of Training for Parent Group Leadership

ALINE B. AUERBACH

Here is some breaking of new ground—in parent group education.

The interest of health services in exploring the place of nurses in parent education is in keeping with the ever-growing interest in this field. From contacts with individuals, groups, and agencies all over the country the Child Study Association of America has seen parent education expand and shift. Whereas it began as a movement initiated and carried on to a great extent by lay people, it has now become a movement in which laymen (or women) still play a part, but in which more and more professional groups are involved, each with a special contribution to make.

The Program and Its Setting

Both the New York State Department of Health and the Children's Bureau have voiced their conviction that parents are, of course, the key figures in the establishment of wholesome families and healthy and happy children, and that group education closely related to parents' needs and making use of modern concepts of learning can play a significant role as part of a broad program of preventive mental health. It was felt, further, that such programs of mental health education are a suitable and necessary extension of health services, and that public health nurses—or some specially selected public health nurses—when properly trained, are in a strategic position to serve as leaders of such groups because of their close contact with families and their knowledge of parents' needs. Accordingly, at the request of the New York State Department of Health, with the interest and cosponsorship of the Children's Bureau, in March, 1954, the association began an experimental program of training for 15 selected public health nurses in the leadership of discussion groups for parents.

The program was undertaken first, to provide a small core of personnel who would be trained to use newer methods of educational group work with parents and expectant parents; second, to try out a plan of training which would give nurses the additional skills—over and beyond what they receive in their usual public health nursing training—that are needed to conduct groups of this kind; and third, to explore whether such a program might serve as a pattern for training programs elsewhere, and if so, with what adaptations. It was thought that the project might also throw some light on problems of selection for leadership, the special assets and limitations of the public health nurse for this kind of work, and the possible significance of these implications for nursing education. In short, it was recognized, to quote from Ruth Gilbert, that since many nurses are faced with the necessity of working with groups, "We must think through relationships and procedures with groups as we have at-

tempted to do with individuals," and "must be able to use group methods as constructively as possible." [1]

Both the Children's Bureau and the New York State Department of Health had known of the long experience of the Child Study Association with parent groups, for they have been an essential part of its program of parent education since 1888. They also knew of a recent project in the training of professional workers from different fields for leadership of parent groups initiated with a grant from the Field Foundation in 1951. This had been conducted successively for two groups of social workers from various types of community agencies and for one group of specially selected educational personnel.

The program consisted of two parts—a 13-week theoretical period of three weekly sessions of one and a half hours each, and a following period of field work practice in which the trainees conducted parent discussion groups under the auspices of their health departments with supervision from the association's training staff.* The three parts of the preliminary training period provided a balanced experience of theory, observation, and seminar. The theoretical sessions covered two kinds of material—content of parent group education and technics of leadership. Nine content sessions presented a review of the psychological and emotional growth of the child within the family, from infancy to maturity, as seen against the current social and cultural setting of this country. Faculty members stressed throughout the parental responses to characteristic stages of child development; they discussed child development and family relations, drawing freely on psychodynamic material where pertinent, but presented their material with a minimum of technical terms; they gave as much attention as was feasible, within the limited number of sessions provided, to the differentiation between normal and pathological behavior of children and between normal and pathological attitudes of parents.

This material was not given to the nurses as content they would in turn pass on as set presentations to the parents in their groups. On the contrary, it was offered to them to round out the background of their own understanding of child development and family relations. This it was hoped they would use flexibly as leaders to guide the parents' discussions along lines consistent with the aims and methods of the program.

Three meetings were devoted to the goals of leadership in parent group education, the basic principles on which this discussion type of group method is based, the technical problems that are involved, and the ways in which leadership skills are used to meet these problems.[2] The faculty for the theoretical training sessions consisted of a group drawn from different disciplines—psychiatry, research and clinical

* The training project for nurses reported here was based on these earlier training programs, but was modified to meet the special needs of this professional group. It was developed with the constant advice and counsel of Dr. Alfred Yankauer, director of the Bureau of Maternal and Child Health and of Eleanor Gochanour, associate director of the Bureau of Public Health Nursing, both in the New York State Department of Health. Miss Gochanour also helped immeasurably with innumerable administrative details. From the beginning the project has been enriched by the interest and support of Ruth G. Taylor, chief of the Nursing Section, Division of Health Services, Children's Bureau, and of members of the bureau's regional staff.

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psychology, education, and cultural anthropology.

The questions raised in the theoretical sessions were developed further in the seminar held throughout the training period and were coordinated with the nurses' responses to continuing observation of one of three parent groups which met for 12 sessions and were led by leaders on the association's staff. One of these parent groups was for parents of school-age children; two were for parents of children from infancy to five. One met in a hospital setting and was recruited from former maternity patients who had attended classes for expectant parents.

In the nurses' seminar the trainees initiated discussion of material and questions that seemed most on their minds, thus following a technic similar to that which is the focus of the training program itself. At the same time the training staff introduced—where these did not come from the nurses—essential problems of technics of group leadership, important aspects of community organization, and areas of controversy in both theory and practice of parent group education that might seem especially relevant to those working in the public health field.

Throughout an attempt was made to integrate the experiences gained from the separate parts of the training and to focus on the core of the project—the use of group leadership skills to help parents gain better understanding of their children and themselves. The association's experience in parent group work had shown that parents can learn together from shared experiences and feelings; when guided and reinforced by a skillful leader they gain confidence and competence based on broader knowledge out of which they make their own choices as to what they wish to do and are comfortable in doing—in discipline, perhaps, or handling of a troublesome sleeping situation or toilet training or whatever. To quote from a section on group discussion as a form of health education in the recent Guide, "Health Supervision of Young Children:" "It seems to be a perennial source of surprise and satisfaction to group leaders to discover how freely people will share their experiences with each other when the atmosphere of the group is right. Also, it is astonishing how often people seem to be able to learn from their peers when they cannot accept the same ideas from a person in a position of professional authority." [3] As stated by Paul V. Lemkau, M.D., "Properly carried out, . . . the small group, no more than fifteen persons, meeting at regular intervals over a period of time, is probably the most efficient technique for learning the insights that mental hygiene has to offer and for attaining the attitudes necessary to make them effective in daily living." [4]

As suggested here, parent group education based on the discussion method deals with feelings and attitudes as well as facts, but explores only those that are conscious (or nearly so) and largely common to many. In this it is clearly differentiated from group therapy, which deals also with feelings, but explores unconscious factors. Group therapy focuses on the pathology of the group members and attempts to work through the psychiatric problem; the primary goal of group education is to build on ego strengths. Parent group education is differentiated, on the other hand, from the more conventional classroom teaching in that the discussion is developed from the concerns and live material introduced by the parent-members, rather than along the lines of a set curriculum. At the same time the leaders are expected to be alert to the special areas where "anticipatory guidance" is known to be indicated, so that these concerns can be developed when they appear, and can be suggested—or tentatively introduced—if they do not.

Thus, the leader is constantly guided by the needs and readiness of the group members.

It is necessary to point out one further differentiation in group method—the difference between parent group education, as defined here, and what is popularly called "group dynamics." Parent group leaders are expected to make use of many concepts of group process and group interaction developed in the broader field of the dynamic social sciences. However, parent group education sees its function primarily as that of helping parents to become better parents, rather than better group members; it concentrates on the specific concern which brings the parents to such groups—their parenthood and their children—rather than on the nature of their participation or their role in the group.

These distinctions were clarified with the nurses during the preparatory training period as they discussed specific technics that could be used toward specific group goals. These concepts became more real when they began to put them into practice in the period of field work in leading groups of their own.

Although from the outset the program had as its goal the training of nurses to meet both with groups of parents and with groups of expectant parents, it was decided to focus on the conduct of parent groups first, in order to develop skills of leadership in this field which could later be applied to work with antepartum classes.* This decision to first prepare for leadership of parent groups was made for two reasons.

Through parent groups health departments would maintain with young families contacts established in many cases through antepartum classes and would provide a broad educational program for all families as a supplement to individual child health conferences. By and large nurses have had little or no experience with parent groups and need training for this work.

It was thought the nurses might develop a new type of leadership skill more easily and effectively in an area in which they had not functioned before, rather than in a field in which they had already established definite methodological routines, i.e., in antepartum classes. Once the nurses were familiar with these skills and comfortable with them, it was thought they might apply them flexibly in another area.

As the program developed four theoretical sessions were added on the characteristic psychological and emotional aspects of the pregnancy and postpartum period and the application of discussion leadership technics to work with expectant parents. These sessions were given by an obstetrician, a research psychologist, and two psychiatrists; the nurse-trainees met again in group seminar to discuss the new material, in preparation for field work practice with groups of expectant parents to be held this fall.

Plan for Evaluation—Plans were made at the outset for a research staff to study the program under the general direction of a research advisory committee.* The study focused on the

* In this project, the term "parent groups" is used to refer to groups of parents of children from infancy on, as distinct from groups of expectant parents. Either kind of group may be made up of mothers or of fathers or of mothers and fathers together.

* This committee consisted of Dr. Yankauer and Miss Gochanour of the New York State Department of Health; Dr. Helen L. Bunge of Teachers College, Columbia University; Dr. Leon Yarrow (subsequently replaced by Dr. Marion Crane) of the Children's Bureau; Dr. Harold Jacobziner of the New York City Health Department; and Dr. Carol Creedon, then a social science research fellow of the Russell Sage Foundation. The work was initiated by Dr. Irving Shapiro, health educator, and CSAA staff, and was later carried on jointly by Dr. Shapiro and Dr. Creedon.

effectiveness of the program as seen in the growth and movement of the nurse-trainees, measured before, during, and after training. The committee recognized that the program was based on the assumption that the method of parent group education presented is sound and contributes to favorable growth and change of the parents. This assumption is based on pragmatic experience over a considerable period of time, but has not been tested scientifically, except for a recent study which pointed to positive results.[5]

Nineteen instruments were employed to measure the responses of the nurses to the training program. Some of these were used with the nurses themselves, others with persons who knew them either in their own offices or in the training program—their immediate staff supervisors, members of CSAA training staff, and CSAA supervisors of field work.

Training Program in Operation

The nurses were selected for this program on the basis of a statement of criteria prepared by the public health nursing staff of the New York State Department of Health after conference with the training staff of the association. The criteria were defined as follows:

1. A qualified public health nurse with two years' experience, one of which may have been with another public health agency.
2. Work performance indicating potentiality for working with groups: a. good interpersonal relationships in her work—individual, families, groups, community; b. ability to plan her work yet maintain flexibility of action (ability to accept change); and c. willingness to try new things (approach, skills, etc.) as demonstrated in past and current work performance.
3. Nurses' total program should be evaluated to avoid excessive demands (work, education, etc.) upon her because of the intensity of this kind of experience.
4. Likely to stay on the staff.
5. Interest in working with groups of expectant parents and parent-child study groups, etc.
6. Local situation favorable to development of group activities.

The 15 participants selected by the local offices were of different ages (from the late twenties to the mid-fifties) and different racial and cultural backgrounds. Two nurses who took part in the program were consultants at the state level, one in obstetrical and the other in pediatric nursing. The remaining 13 nurse-trainees were all at the staff level with the exception of one supervisor, who was selected to participate with the understanding that she, too, would complete the full program, including conducting parent groups. It was made clear that participation in this program, whether by the nurses or even by the two state consultants and the supervisor, was not considered an adequate basis for training other staff members. It was recognized that training for leadership of parent groups involves a complexity of knowledge of child development and parent-child relations, as well as of the group process as a method of learning, and that to acquire this there is needed a balanced program of theoretical sessions, observations of groups, seminar discussions, and considerable field work practice. This could scarcely be provided by any one person, but is made possible by the contributions of a varied faculty drawn from different disciplines and of a specially trained supervisory staff. Even for the trainees to serve later as field work supervisors requires some additional preparation in supervision of this special type of program.

Theoretical Training Period—In the theoretical sessions the nurses responded well to the dynamic interpretation of children's behavior and of parental attitudes and concerns at different stages of growth. Some seemed far more familiar with these concepts than others. In their verbal comments and in the research instruments they were espe-

cially enthusiastic about the interpretation of the newborn and the early years given by Dr. Katherine M. Wolf of the Yale Child Study Center. They also found most challenging her broad picture of the psychological aspects of pregnancy, stressing the typical mood swings of expectant mothers and the progressive shifts of interest between themselves and the coming babies and of the beginnings of parental attitudes toward the child. They immediately related the significance of this material and that of the additional meetings on the antepartum and postpartum periods to their methods of group leadership and questioned whether the content of these classes might not be geared more suitably to the shifting interests and concerns of the expectant parent than had been done before.

In contrast to their active response to Dr. Wolf's material they showed much less spontaneity in their response to the discussions of the school years and of adolescence, although here, too, they were given new and challenging material. It is possible that their reaction to these sessions was influenced by a feeling of greater remoteness from the problems of these periods, since they have most contact with parents of young children.

They accepted without open questioning the interpretations of normal psychosexual development given throughout the course, as this is manifested at different stages of growth, including adolescence. Their attitude toward this material suggested at the time that the nurses as a group were quite familiar with the point of view presented and therefore had few comments or questions. Later experience with several of the nurses in individual conferences and observation did not confirm this impression. Their attitude toward the sexual material presented in their parent groups suggested that their passive response in the theoretical sessions may have come from some reactions within themselves which caused them to veer away from the subject until they were forced to meet it directly with their parent-clients.

There was considerable variation among the nurses in their ability to recognize deviant, pathological behavior, many of them appearing to accept rather unusual, almost extreme manifestations as normal. This may be due to the fact that in their professional work they were often consulted about children whose development was atypical physically rather than psychologically, and that neither their academic training nor their practical experience had provided them with a clear picture of normal psychological development. This impression was confirmed when the training staff worked more closely with the nurses during the field work period.

In the sessions on the technics of leadership in parent group education they were not especially interested in certain theoretical concepts of group method which had preoccupied previous trainees from other professional fields. The difference between group education and group therapy, for example, was not of great concern to them, nor were they much interested in the theoretical formulation of technics that were suitable for the one as compared with the other. They moved much more quickly, however, into practical questions of group leadership—of how the leader got the group to talk, what she did when they talked too much, or when they broke up into subgroups, etc. It was only after they had spent considerable time on such specifics that they seemed able to consider some of the underlying theoretical issues.

It was the nurses' response to the group seminar which the CSAA training staff found most puzzling. Here, there was a stiffness, a seeming reluctance to express themselves, that was out of

keeping with their interest in the program as a whole and in marked contrast to the use of seminars by other professional groups. Although they had a good esprit de corps and developed an apparent liking for one another and for the training staff, only occasionally did they come to life as a homogeneous group. Their statements in the research questionnaires also confirmed this impression that the seminar was the one part of the program about which they had some negative feelings and which they thought could be shortened.

The reasons for this reaction can only be surmised. Although all of the nurses have undoubtedly had considerable experience with some type of group discussion in staff conferences and workshops, it is possible that many of them have had more experience—particularly in their training years—with structured, didactic sessions in which material was presented to them rather than developed from them. With the exception of a few very alert, younger members and one or two of the more mature, older ones with well rounded experience this group did not easily initiate questions or concerns that would push the program forward in relation to their special needs.

Yet the nurses' experience in seminar had certain values. The trainees gradually came to assume greater responsibility in bringing up the questions they felt important. And the seminar gave them a sense of what parents may experience in group participation, although the situations are, of course, not completely comparable.

Field Work Period—Although one of the criteria of selection had been defined as "local situation favorable to development of group activities," in practice it was found that there were many difficulties in the way of "favorable" organization of a parent group that would provide opportunities for the required field work experience.

Because of the demands on the health services due to the trial polio vaccination program, it was not possible for the training staff to meet with the local health officers and directors of nursing as early as had been hoped to interpret the program and to enlist their cooperation in organization of parent groups. The regional health director, however, arranged such a meeting after the program was under way and called a second meeting several months later for local directors of nursing and the supervisors of the nurse-trainees, some of whom were confused and felt on the outside of the project. These meetings gave the staffs of the New York State Health Department and the Child Study Association an opportunity to interpret the program, to discuss what was involved in the way of time commitments for the nurse-trainees, and to discuss common problems of recruitment and group organization, in order to mobilize the interest of administrative personnel and to suggest ways in which they could give their workers the help they needed in their communities and within their local offices as well.

In retrospect it seems that the unexpected community organization difficulties were due to a variety of causes. In some cases the administrative health personnel underestimated the amount of time and work required to organize parent groups, or the offices lacked the necessary "know-how" of community organization. In other cases complications occurred because there was not a clear definition of areas of responsibility as to who should attend to the practical details of recruitment—the nurse-leader herself, the health educator, or other administrative personnel. Throughout, there was not enough recognition of the amount of interpretation to the community that is needed to introduce any new program. The situation was further complicated by

the fact that many communities were accustomed to the idea that parent discussion groups were usually led by psychologists, social workers, psychiatrists, or educators. Here, then, not merely a new program under health auspices needed to be interpreted, but a new role for public health personnel.

Nurse in Leadership Role—In the questionnaire on group methods that the nurses filled out at their first session they showed quite a sophisticated attitude toward what might be accomplished through the discussion method, even before they had been given any interpretation of the training program. Yet their questions and concerns during the theoretical training period indicated that they were timid about taking on a new leadership role in which these principles would be applied. While they had shown considerable ability to evaluate the appropriateness of the leader's behavior in specific group situations as described on paper, many of the group seemed to "go blank" when they tried to anticipate what they would do as leaders of discussion to help parents move toward the desired goal of greater understanding. It was not until they tested themselves out in practice that they really began to make use for themselves of the theories they had discussed and the technics they had seen used in their observations.

Like other professional groups, the nurses had some difficulties at the start. Many swung away from being what they called "active" to being too "passive" and let the discussion run without direction during early sessions until they began to see that the issue was not activity versus passivity, but rather how the leader used her activity and toward what ends. The leader's role in giving information was also not resolved easily by this group.

Practically all members of this training group found it hard to know when and how to suggest that certain situations might have to be explored further in individual guidance settings. Once they came to such decisions, they knew community resources and were able to make appropriate referrals. As a balance to the areas in which the nurses had difficulty, there were many positive aspects of their work. They were very ready to take suggestions about problems of organization, they had real feeling for the parents with whom they met, were eager and conscientious in their approach to leadership, flexible in trying new technics, and honest and sincere in examining their own performance and their feelings about the entire experience.

There were also clear signs of the nurses' abilities to grow through supervision in the field work experience. While the concept of supervision, as used here, was drawn from the field of casework, it was recognized that in this setting it was in no way as intensive and that it would not be possible nor even advisable to open up those aspects of the nurses' use of themselves as leaders that involved basic personality problems. Supervision by CSAA staff was directed rather toward helping the nurses at the level of their performance, focusing on the development of specific technics and skills.

The previous experience of the association with its other training programs had already indicated that leadership of one group under supervision was not sufficient to consolidate a trainee's skill in this field. The nurses' performances confirmed this decision. In the judgment of the supervisors, none, not even the most expert and mature, was thought to be competent enough after leading just one group to continue without supervision and consultation through at least a second experience with a parent group.

Estimate of Nurses' Leadership Abilities—As judged by the association's staff, this group showed great variation

in leadership ability at the end of the field work period, ranging from three who showed exceptional ability down the scale to two who were thought to have difficulty in functioning because of a certain rigidity and literalness and one who was judged unsuitable for this type of work. Thus, even in this small group of selected nurses, the individual trainees seem to scatter along the usual statistical curve of normal expectancy with some weighting toward the more positive levels of achievement.

Evaluation

Research Findings—Because of problems inherent in the timing of the program; because this was a pioneer study in this field; and because the training group was a small one, the findings of the research study can be considered only as tentative. The study is being repeated with two new training groups in order to give these findings a broader base. In the meantime, however, certain significant implications have emerged.

Each of the different measures employed indicated some movement in a favorable direction. With regard to child development and parent child relations the preponderance of new knowledge gained was in the area of psychological and emotional growth of children. There was also a new awareness that for parents facts alone are not enough, that parental attitudes and feelings are of prime importance in parent-child relations, and that change in parental attitudes is possible through an educational approach.

In their understanding of the principles of the group discussion method, in which the nurses had rated high at the start, there was some change toward greater refinement of their understanding of technics and of the values of the discussion method as compared with the lecture or lecture-demonstration method. With regard to their conduct of groups in field work there was learning in two directions: a change (improvement) in sensitivity with respect to the elements of group discussion, and better ability to function as group leaders.

With regard to the technics of group leadership the trainees found new the concept that in conducting groups by the use of the discussion method, the content regarding child-rearing arises from the group, and the principles are developed by the group members with the leader's help. In addition, the trainees recognized that parent-group education is a complex method in which there is much to be learned and in which leadership cannot be acquired quickly or carried on by the use of easy devices.

In general, the trainees indicated that they were well satisfied with the program as a whole and with the distribution of time given to its different parts. Nine of the 14 nurses who completed the program (one having left for health reasons) considered "most helpful" the direct observation of a parent group, thus underscoring the importance of providing an experience of continuing observation of this kind.

Other data confirmed that much of the nurses' new knowledge and new skills in parent group leadership were gained from observation and stressed also the importance of practice under supervision. The principles of parent group education and the essential background content outlined in the lecture sessions seemed to become meaningful only when they were observed in operation and actually applied. This indicated the need for a balanced, varied program in the training of nurses for parent group education.

The research findings have not thrown additional light on the selection of trainees for such work, which was one of the secondary goals of the study. The available data on the nurses' backgrounds of training and experience were

not sufficient to provide for valid conclusions. So far, only a small approach was made to the question of factors of personality, which also play a significant part in success or failure in this work. The use of two correlated measurements of antidemocratic or authoritarian personality trends, correlated in turn with the staff ratings of the trainees' performances, gave some indication that the more authoritarian the nurse, the less effective is the training, but much more study is needed of the significance of many personality factors, including intelligence level, flexibility, and emotional maturity.

On the possible significance of the program for nursing education, the study suggests chiefly that these nurses were not as adequately prepared as might have been expected with regard to certain important aspects of child development and parent-child relationships which, certainly, pervade all phases of their work, whether they are working with parents in groups or seeing parents and children, or both, in clinic conferences or home visits. If further study of other groups of nurses validates these findings, the conclusions may point out the need to add this and other content to the curriculums of schools of nursing at large, as well as for changes in teaching methods and selection of students.

These nurses were also found in practice to be quite unskilled in the use of discussion technics as a method of helping parents learn, despite their initial seeming sophistication in this area. Whether this has any bearing on nursing education is related to the question of how extensively one defines the goals of this field. Is public health nursing education to be seen as offering a background for general work in the field which would be supplemented by additional training for those with special interests and aptitudes in such specialized areas as the conduct of groups and classes of different kinds? Or should the content of nursing education for all students be broadened to include content and skills for a specialized field of work?

Related to this question is that of the degree to which the nurses' attitudes and reactions to the use of free discussion are related to their own personal experiences with this method. Have they had real opportunity to experience the use of group discussion in learning situations? Or are they more accustomed to—and, therefore, more comfortable with—a didactic approach?

Summary of Staff Impressions—The program seems to show that leadership of parent groups based on the discussion method is a skill that can be acquired with special training by public health nurses, but that, as in other professional groups, not all nurses may be expected to function in this area.

Public health nurses, suitably chosen and trained, are vocationally in a strategic position to enter the field of parent group education, since they are in close contact with families at important points in the family cycle. The access of public health nurses to families is, therefore, natural and extensive (in many communities they are the only professional "helping" person available) and forms a logical basis for extending their educational services.

As a professional group nurses bring to this work certain assets and certain limitations, as all professional groups do. Their assets seem to be: thorough knowledge of certain phases of individual growth and family needs, with special stress on the physical side in health and in illness; sympathy for the needs of children and, to a lesser degree, sympathy for parents; close contact with families in the community; knowledge of community resources for personal and health services; some familiarity on the part of certain nurses

with broad concepts of group discussion gained in their recent training and in staff conferences, which has seemed to give them a favorable attitude to this method of group functioning; a conscientious and responsible attitude toward the acquisition of new skills and toward their use of themselves in a disciplined, professional way; and acceptance of supervision, including being observed in action.

Their limitations seem to be: lack of sufficient understanding of the psychological and emotional factors in child growth and development and in family relations; insufficient knowledge of the dynamics of behavior, individually and in groups; limited diagnostic awareness of pathology in child behavior and parental attitudes; little familiarity with cultural variations in child care attitudes and practices; little practical knowledge of group technics; and limited knowledge and acceptance of their active role in the use of individual supervisory conferences.

No single professional group and few individuals come to work in parent group education with all of the knowledge and skills suggested above. The assets and limitations have been tentatively assessed for nurses, as they have been for other professional groups, against a combination of qualities and skills considered vital for this work, but recognized as optimal.[6]

For nurses, as well as for other professional groups, it takes time to learn skills in this field and to shift from using one type of teaching method to another. Meeting with parents in groups is, therefore, not the easy answer to heavy pressures for service, nor is it as economical of agency time as it is often claimed to be, as compared with individual contacts. Not only does it take time to absorb these new theoretical concepts, but it takes time and care to conduct such a program thoughtfully, with careful planning, recording, and evaluation of each session, etc. It also takes extended practice under supervision to translate the theory into practice. It takes time, too, for communities to accept new programs or new forms of accepted programs, such as antepartum classes, and to feel secure with a member of a different professional group—here, the nurse—as leader of parent groups.

For such programs to be effective nurses need staff support and cooperation in guiding the program through problems of recruitment and organization that are special to each community[7] and in arranging their work load so they will be free to give sufficient time and attention to their conduct of the groups.

Such support and cooperation can come only when the administrative heads of the local offices are thoroughly familiar with the goals of such groups and sincerely believe that they offer an important service to the community.

Current Projects

To consolidate the program described here, the New York State Department of Health has authorized a threefold program now in progress: supervision of the first group of nurses in the conduct of second parent groups and antepartum groups; a new complete program for public health nurses; and a training program for hospital nurses for work with groups of expectant parents. The research project is being continued to evaluate the effectiveness of the two new training projects.

Some changes have been instituted to provide a more compact program in which it is hoped that the trainees will more quickly consolidate their skills and make an additional contribution to the health and well-being of families in their communities. The word "additional" is used advisedly, for at no point have those interested in the program

considered group work with parents as a substitute for individual contacts. This is in keeping with a point of view once expressed by Samuel Wishik, M.D., when he said: "It should be possible to combine an individual approach to the needs of each mother with a group approach to the needs of all. One cannot supplant the other; each should complement the other." [8] It is then as one part of a total program of health services that parent group education, conducted by specially selected and specially trained public health and hospital nurses, can play a vital role.

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Clinical Management of Polio

The Southwestern Poliomyelitis Respiratory Center at Baylor University College of Medicine announces a postgraduate course on "Demonstration of Clinical Management of Poliomyelitis" to be held February 27–March 2, 1956, in cooperation with the National Foundation for Infantile Paralysis. Applications for the course should be made to William A. Spencer, M.D., Medical Director, Southwestern Poliomyelitis Respiratory Center, 1801 Buffalo Drive, Houston 3, Tex.

The course is designed for physicians, nurses, medical social service workers, physical and occupational therapists to cover complete care of poliomyelitis with emphasis on the severely involved patient, the physician's responsibility in the effective coordination of auxiliary services and the value of comprehensive care. Preference will be given to personnel who are or will be directly concerned with poliomyelitis patient management.

Tuition of $8.50 must accompany application. Some financial assistance is available to those needing it. Physicians and nurses should request such assistance from their local NFIP chapters. Medical social workers, physical and occupational therapists, and those doctors and nurses whose responsibilities cover more than a local area should apply to Division of Professional Education, National Foundation for Infantile Paralysis, 120 Broadway, New York 5, N. Y.

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The Royal Society for the Promotion of Health

This new title has recently become the official designation of the Royal Sanitary Institute of Great Britain. The Institute, which was founded in 1876, represents the largest grouping of its kind other than the American Public Health Association and as a sister society it is bound to its American counterpart by many ties.

The editor of the journal, now called "The Royal Society for the Promotion of Health Journal," points out that in 1876 the meaning of the word "sanitary" was "pertaining to health." Today the word sanitary is virtually a misnomer, as in British parlance it is no longer associated with "health" in its true sense.

The scope and the work of the Royal Society for the Promotion of Health are not confined to any particular branch of health. They include, among other features, personal hygiene, public health, preventive medicine, social medicine, mental health, veterinary hygiene, architecture and building, town planning, surveying, estate management, public health engineering, sanitary science, tropical hygiene, occupational health, industrial hygiene, smoke prevention, health education, maternal and child health, nursing, midwifery, health visiting, and food and nutrition. The former title proved descriptive obviously of only a fraction of these activities. It was finally concluded that it would be desirable if the original meaning of "sanitary" were restored by translating it into "health," a term which already appears in the armorial bearings as "salus generis humani."

The American Public Health Association, which preceded by some four years the organization of the Royal Sanitary Institute, greets its counterpart in Great Britain on this occasion and wishes for the Royal Society for the Promotion of Health, long life and continued usefulness. We shall become familiar in time with the new designations for fellows, members, associates, and affiliates of the Royal Society for whom new designations will now be established as F.R.S.H., M.R.S.H., A.R.S.H., and Affil. R.S.H., respectively.

There is a touch of pageantry in the official announcement unfamiliar to many in the Americas who now read, "The Council have the honour to announce that Her Majesty the Queen, Patron of the Institute, has been graciously pleased to Command that the Institute be known henceforth as 'The Royal Society for the Promotion of Health.'"

The Place of the Children's Bureau

One recommendation of the Medical Task Force of the Hoover Commission, among others, is clear, specific, and sensible. It deals with the appropriate administrative position of the Children's Bureau in the federal government structure. The Task Force proposes "That the Children's Bureau be removed from the Social Security Administration and placed in an administrative position in the Department of Health, Education, and Welfare that will facilitate the major mission of the Bureau. This mission is to take cognizance of the needs of the whole child in the broad fields of health, education and welfare, support necessary research in the field, and stimulate the utilization of new knowledge by the various agencies of the Federal Government within and outside the Department of Health, Education, and Welfare and in the States."

If this recommendation is adopted as it could be by administrative order, since legislation is not required, the essential mission of the bureau would be facilitated and enriched. A problem requiring study in the field of the bureau would be investigated and new findings routed promptly to those who protect and salvage the child at any level of government.

The Medical Task Force made no recommendations concerning grants-in-aid to the states by the Children's Bureau. Since this is a question which has no bearing on the administrative position of the bureau, the two points should not be confused. As the Hoover Report points out, the bureau "has operated with dedication and with outstanding success." It should be so placed administratively that its work can proceed unhampered by unnecessary restriction. Under the leadership which the bureau now enjoys and which it has had in the past, even greater achievements may be anticipated in the future.

See digest of Task Force recommendation, American Journal of Public Health, April, 1955, page 513.

The Adult Education Movement and the Public Health Professions

It would probably come as a surprise to Dr. Stephen Smith or his colleagues who founded the American Public Health Association in 1872 that this enterprise would one day be regarded as an important part of the movement for adult education. Yet it is in these terms that the APHA is now thought of by many of its counterparts among similar professional societies. Indeed, even the concept of the APHA as a professional society of public health workers was not explicit in the early declarations of purpose. These purposes were more often directed in the early years toward the removal of major menaces to the public health and the original concept underlying the APHA was that of an action agency directed against bad housing, poor municipal cleanliness, the disposal of human wastes, and inadequate water supplies.

The recent coming of age of the adult education movement has set new perspectives around this organization called the APHA with its many disciplines and varied professional backgrounds. We are indebted principally to the health educators for the present link between the APHA and its fellow members of the so-called Council

of National Organizations of the Adult Education Association. Admittedly, some physicians, some engineers and other specialists are still finding difficulty in conceiving of the APHA in these newer terms. They see more proximate goals as deserving the full attention of those committed to this kind of public service. The precision of methods in the public health laboratory, for example, seem to them goals worthy of the undivided attention of those with such knowledge. It is not easy to shift to a concept which sees such an organization as ours as having a basic concern with the educational processes.

Let us set down, however, some of the elements of the APHA program which can be classified under the general head of adult education.

It is 50 years, for instance, since publication of the first edition of Standard Methods for the Examination of Water, Sewage and Industrial Wastes. This volume now underlies the methods used to accomplish one of the basic aims of the APHA founders and is widely used in educational programs.

Thirty-eight years and eight editions of the volume on Control of Communicable Diseases in Man underlie the current improved methods which health workers now use in this field, not only in North America but throughout the world.

Similar books have had like influence on the knowledge and performance of professional and voluntary workers in child health, in housing, in public health engineering practice, and in specialized education for public health. This Journal is, of course, an instrument of adult education.

A practical problem arises when we ask ourselves to what extent it will be fruitful for the APHA to identify itself through official representation with more than a hundred other national agencies who recognize an adult education component in their programs. To do this effectively requires real time and effort that might be useful elsewhere.

To some, many of the goals and approaches to this coordinated movement seem vague and ill-defined. Perhaps this is only natural in view of the newness of these concepts and the multiplicity of interests within the Council of National Organizations.

As a professional society of public health workers, we have obligations to shape up our program around goals of practical service to the membership and to public health in general. Very obviously this means a continuation of services so familiar to us and so fruitful in the past. This should not mean, however, blind adherence to traditional patterns of operation. The proposed affiliation should be explored as to its potentialities for mutual helpfulness. Agencies for adult education need and are seeking increasingly the knowledge and guidance we can give. We, on the other hand, may find opened to us new channels through which our knowledge may flow toward the ultimate improvement of the public's health.

Here lies an area of policy deserving the study and guidance of the Governing Council with our best planners for the future.

Tax-Supported Personal Health Services for the Needy

A Statement of Principles *

This statement has been prepared as a guide for the provision of tax-supported personal health services required for those individuals who are unable to obtain such services through their own resources or with the assistance of their families or voluntary agencies. Personal health services are defined, for the purposes of this statement, to include the services of physicians, dentists, nurses, and other health personnel as well as hospital care, laboratory services, drugs, and appliances. The statement is not intended to apply to health service programs designed for the entire community and therefore available to individuals without regard to financial need.

1. Tax-supported personal health services for the needy should be administered by an appropriate governmental unit, local or state, as close to those being served as is consistent with effective, efficient, and economical administration.

2. This responsibility (with the possible exception of services provided in public institutions) should be assumed by a single agency which may be either the health or welfare agency at each level of government.

3. The financing of such health services should be assumed by the appropriate unit of government, local or state, supplemented by funds from higher governmental authorities in order to assure adequate service.

4. The health service program should be directed by persons with technical knowledge of health care and should provide for professional supervision of all professional aspects. Appropriate advisory committees should be appointed and used to provide advice and guidance on various aspects of the program.

5. Care provided in tax-supported personal health service programs for the needy should meet as high standards of quality and adequacy as can reasonably be made available to others in the community. Such standards should be professionally determined by the administrative agency in cooperation with representatives of the professional group concerned.

6. Persons eligible for service should have the opportunity to receive care from a family physician, dentist, or clinic of their own choice, selected from among those accepted as qualified by the agency responsible for the program.

7. The personal health service program should encourage continuity of care, whether services are made available in the office, clinic, or hospital.

8. To conserve good health and reduce dependency resulting from ill-health, the health service program

* This statement was developed by the Joint Conference Committee on Medical Care for the Needy which has representation from the American Dental Association, the American Hospital Association, the American Medical Association, the American Public Health Association, and the American Public Welfare Association. This is an official statement of the American Public Health Association, approved by the Governing Council in April, 1955. The statement also has the approval of the American Dental Association and the American Hospital Association Boards of Trustees and the Board of Directors of the American Public Welfare Association. At the date of publication it was still under consideration by the American Medical Association Board of Trustees.

should emphasize positive health promotion, including health education, disease prevention, early diagnosis and treatment, and rehabilitation.

9. The responsible administrative agency and the individuals and institutions providing the service should protect the rights and dignity of the patient, including the confidential nature of information regarding the patient's illnesses. The information needed for sound administration and for coordination of health and social services in the best interests of the patient should be available to the administrative agency and the providers of service.

10. Services should be so organized and administered as to assure maximum economy without sacrifice of quality of care. The program should avoid unnecessary duplications by utilizing existing services and facilities that meet high standards.

11. Financial eligibility for tax-supported medical care should be determined by a public agency and not by the provider of service.

12. The process of determining financial eligibility should be prompt and should not delay receipt of necessary care. The eligible person should have access to medical care, as needed, during the period of his eligibility.

13. Objective standards of eligibility should be applied equally and without discrimination to all applicants.

14. Methods and amounts of payment for personal health services should be equitable and determined in conference between the responsible public agency and representatives of the providers. In the case of institutions, payment schedules should be based on the full certified cost of services as determined by acceptable cost accounting procedures.

American Board of Nutrition

The American Board of Nutrition will hold the next examinations for certification as a Specialist in Human Nutrition in April, 1956. The final date for receipt of applications is February 1, 1956. Application forms may be obtained from the Secretary, Otto A. Bessey, Department of Biochemistry and Nutrition, University of Texas School of Medicine, Galveston.

Books and Reports

All reviews are prepared on invitation. Unsolicited reviews cannot be accepted.

A Textbook of Physiology—Edited by John F. Fulton (17th ed.). New Haven, Conn.: Saunders, 1955. 1275 pp.; 600 illus. Price, $13.50.

The seventeenth edition of this textbook follows the first by half a century and is offered as a standard text for medical students who, as before, will groan at its innumerable facts and theories as well as its sheer mass (almost 5 pounds). But even in 1,275 pages not all of physiology can be covered in scholarly detail. In the preface to the first edition Howell emphasized "a judicious limitation of the material selected." How well this principle has been followed will be debated; each specialist will argue that his own field has been slighted. Such criticisms are inevitable.

A more valid objection is that this edition continues to be overbalanced on the nervous and sensory systems or, to put it in another way, it is less adequate in the fields of metabolism, nutrition, and the endocrines. And, as in other texts produced by many collaborators, the forest may often be lost because of the trees. In other words, we could wish for more integration. Perhaps a more realistic total understanding of human physiology might emerge from applications and syntheses in real life situations. The whole picture of the working of the body and its alterations in representative stressful situations, such as physical work, starvation, and various states of disease and injury is not easy to portray or to grasp. But this is what all the details should lead to.

With regard to details, the heritage of previous editions weighs heavily on some sections and the references are often of more historical interest than currently informative. It is difficult to understand how "judicious limitation" requires omission of many new viewpoints and facts, such as on the role of the lipoproteins in fat transport, the "active tissue mass" in basal metabolism, the problem of edema, adjustments to hypoxia, the physiologic effects of emotion, and the variations between individuals.

In spite of these strictures, this is a valuable book, a valiant attempt to achieve the impossible goal of satisfying student, teacher, and specialist. The exposition is lucid and the evidence is presented with a minimum of dogmatic statement. Perhaps it is captious to ask more.

ANCEL KEYS

American Foundations and Their Fields—By Wilmer Shields Rich (7th ed.). New York: American Foundations Information Service (860 Broadway), 1955. 744 pp. Price, $35.00.

This long-awaited volume is the seventh edition in the series begun in 1931 by the Twentieth Century Fund, expanding from 243 foundations in the first edition to 4,162 in this one. There is no doubt that this is the most comprehensive study of foundations ever undertaken. It comprises data furnished voluntarily by foundations and those gathered from public records. The sponsors are Raymond Rich Associates and Marts and Lundy, Inc.

A foundation in this volume is described as a nonprofit, legal entity having a principal fund of its own, or receiving charitable contributions from

a living founder, governed by its own trustees or directors, and established to serve the welfare of mankind. Community foundations and trusts are included. Excluded are foundations which solicit endowment or operating funds, those which have been created for the benefit of a single institution or group, and those whose activities are restricted to the furnishing of a clinical or other community service. It is estimated that there may be more than 7,000 foundations in the United States, many of which are incompletely known to federal and state authorities. More than half of those included were established in the 1940's, reflecting the effort to reduce taxable income by increasing gifts to welfare causes. Measured in terms of capital assets, the seven largest foundations bear the names of Ford, Rockefeller, Carnegie, Kellogg, Duke, the Commonwealth Fund (Harkness), and the Pew Memorial Foundation.

When grouped according to the size of their resources, it is apparent that gifts in the field of health and medicine, broadly considered and including mental health, medical education, hospitals, nursing and medical care, represent the largest fields of current interest. Education and public welfare are also well represented, with an increasing emphasis on the humanities and the social sciences.

The main portion of the volume is made up of a listing of individual foundations by states, showing the corporate name and the address, the date of establishment, purposes, limitations, and financial data when available. The appendixes describe the method of study of foundations, some sample legal documents which might underlie a foundation or trust, and an excellent appendix on how to apply for foundation aid which ought to be read by every prospective applicant.

This is a definitive volume which will be indispensable to those who want to understand and use the latest information about foundations. It is highly recommended.

REGINALD M. ATWATER

American Standard National Plumbing Code—ASA–A40.8–1955—New York: American Society of Mechanical Engineers (29 West 39th St.), 1955. 186 pp. Price, $3.50.

This code is the culmination of over thirty years of effort by governmental, industrial, and organizational representatives to develop a set of standards for the plumbing field that would meet country-wide acceptance. Under the sponsorship of the American Public Health Association and the American Society of Mechanical Engineers, a coordinating committee with representation from professional and industry associations and with specially set up research facilities labored for six years to harmonize the previously issued American Standards National Plumbing Code of 1949 with the many other codes of widespread use. The presently issued code should meet this need for practically a country-wide recognition as a set of minimum requirements.

The introductory chapter entitled "Basic Principles" sets forth in clear and concise words 22 guiding sanitary and safety principles which plumbing construction must meet. This is followed by a valuable chapter on "Definitions" which covers all plumbing terms that are encountered in the code. In the 13 chapters of the code itself, the standards for design, construction and acceptable materials for plumbing are presented in clear terms, carefully worded to eliminate as far as possible any confusion or uncertain interpretations.

The value of the volume is greatly enhanced by the addition of seven appendixes, which cover suggestions for the administration of the code, standards for individual water supply and

sewage disposal systems, air gaps and back water preventers and trailer coach and trailer park plumbing. The very important subject of sizing of water supply systems which is not commonly provided in plumbing codes is adequately treated in an appendix.

This 1955 National Plumbing Code warrants the support and endorsement of public health and building officials generally, for whom it should prove a most valuable guide in efforts to modernize their individual plumbing codes.

SOL PINCUS

Supplement 1936–1953 to Population, Births, Notifiable Diseases, and Deaths, Assembled for New York City, New York. 1866–1938 from Official Records—By Haven Emerson and Harriet E. Hughes. New York: DeLamar Institute of Public Health, Columbia University (600 West 168th St.), 1955. 202 Tabulation Sheets. Not for Sale.

This Supplement and the earlier volume present an 88-year series of the basic vital statistics for New York City. Both reports concern themselves mainly with a detailed tabulation of deaths by cause, sex, age, and for all ages, by color, in each of the years 1866–1953. Because of important changes in the fifth (1939) and sixth (1948) revisions of the International List of Causes of Death, the 1936–1953 figures in the Supplement were adjusted by combination of rubrics to attain the maximum of comparability with those for 1866–1935. The reader will note that the data are on a recorded basis, which overstates or understates in varying degree the actual mortality from certain causes among the resident population. In some cases, the coding procedure employed since 1951 has added to the difficulty of direct comparison with the recorded figures prior to that year and, for diseases such as diabetes and nephritis, has made it quite impossible.

The other tables in the Supplement show the population by sex and color at the census years 1930, 1940, and 1950, with estimates of the total population for each of the years 1936–1953; births by sex and color and by month; fetal and infant deaths, and deaths under 5 years; and cases of certain reportable diseases by sex and age and by week or month of notification.

In the words of Dr. Emerson, "such a large accumulation of vital records of reliable authenticity" probably can be found "for no other urban unit of population under a single administrative direction." The material was laboriously assembled from weekly, monthly, and annual reports and, in large part, from unpublished records in the City Department of Health. As a working statistician, the writer has special appreciation of the magnitude of the compilation and wholeheartedly subscribes to the concluding statement in the review of the earlier volume in the August, 1951, issue of the Journal, that all students and workers in the field of public health "have every reason to be grateful to Dr. Emerson and Miss Hughes for making it so readily available."

J. V. DEPORTE

Introduction to Parasitology: With Special Reference to the Parasites of Man—By Asa C. Chandler (9th ed.). New York: Wiley (440 Fifth Ave.), 1955. 799 pp. Price, $8.50.

This lastest edition of Chandler's volume has all the excellent qualities of its predecessors. It is so enlarged that the title no longer connotes the wide coverage of the subject. In fact, the clinical and public health features take the contents well beyond the category of an introductory textbook designed for use in undergraduate curricula where the subject is usually introduced. However, clinical discussions, as pointed out in the preface, are

not dealt with sufficiently to satisfy the medical student—these are left for the professor to fill in. Chemotherapy and the newer treatment technics are well handled, but at times such information is hidden. For example, the recent use of ACTH in trichiniasis is omitted in the discussion on trichiniasis but is briefly mentioned in "Introduction to the Worms." Descriptions under the headings of pathology deal, for the most part, with symptomatology rather than with pathology. Although veterinary parasitology is given secondary consideration, veterinary students will find this book useful as a reference.

The book is well written in the interesting style characteristic of Dr. Chandler. Like other textbooks, this has its oversights and misstatements, but anyone with any interest in parasitology will find it highly informative reading—it is next best to a talk with Dr. Chandler. DONALD L. AUGUSTINE

Water Treatment Handbook—Etablissements Emile Degrémont, Surèsnes, France. (First English ed.). London, England: H. K. Elliott (20 Harrington Court), 1955. 468 pp. Price, $7.70.

This volume, a translation from French by Donald F. Long, F. I. L., after two French editions, is a comprehensive summary of water examination and treatment, including a section on sewage and wastes, intended, according to the foreword, "to offer advice and instruction to those requiring it in the testing and treatment of water supplies in order to render them suitable for specific purposes."

Following a first chapter of 38 pages on the fundamentals of water chemistry, twelve other chapters summarize, in handbook style, a mass of general information, practical data in the form of tables and graphs, and brief descriptions of water and sewage treatment equipment, with particular reference to that furnished by the firm, Ets. E. Degrémont. These chapters are entitled: Coagulation and Reagent Feeding, Settling and Clarifying, Filtration, Sterilization, Neutralization, Iron and Manganese Removal, Softening and Ion Exchange, Chemical Purification, Treatment of Boiler Feed Water, Treatment of Swimming Pool Water, Miscellaneous Processes (brief discussions of some twenty processes such as aeration, carbonation, use of activated carbon, cathode protection, etc.), and Purification of Sewage Effluents. There are also sections including conversion tables and formulas, similar to those found in engineering handbooks, but which are of particular interest to water treatment engineers and operators.

The handbook is profusely illustrated with schematic diagrams and photographs of water and sewage treatment equipment and of plants in operation, for the most part, in France.

To the American reader, much of the information and data furnished by this volume may appear to be somewhat similar to that found in books published here, and his chief interest in the handbook will probably be found in comparing the Continental methods, as exemplified by the procedures described therein, with those employed on this side of the Atlantic.

The handbook is well printed, in small but easily read type, and is attractively bound, with a plastic waterproof cover. M. H. MCCRADY

The Functions of the Medical Officer of Health—The Society of Medical Officers of Health (Tavistock House South, Tavistock Square), London, England. 46 pp. Price 1 shilling, 6 pence.

The Society of Medical Officers of Health of Great Britain, which is similar in many respects to the Health Officers Section of the American Public Health Association, has published a

pamphlet which in effect spells out both the duties and responsibilities of a health officer and the functions and services of a local health department in Great Britain. To fully appreciate and understand the painstaking and detailed material therein it must be taken in context as a current picture after six years of operation of the National Health Service and National Assistance Acts. It makes recommendations in some matters of jurisdiction that are as controversial in England as they are here. The functions outlined go beyond the "basic six" in that they add mental health, the crippled of both extremes in age, the health of the socially dependent (deprived) child as well as occupational health. However, except for advisory recommendations, the British generally exclude water supply, sewage and refuse disposal from the health department basic responsibilities and functions. On the other hand, they stress housing, food and drug inspection, institutional tuberculosis care, and school health more than the average health department here does.

Although a few of the practices recommended differ from those here, for example, the goal of having births occur in the home rather than the hospital wherever possible, or the statement that all admissions and discharges to tuberculosis and other infectious disease hospitals should be done on the authority of the health officer, in general the majority of their recommendations are as applicable in principle in the United State as in England. EDWARD PRESS

Current Research in Human Fertility—Papers Presented at the 1954 Annual Conference of the Milbank Memorial Fund. New York: Milbank Memorial Fund (40 Wall St.), 1955. 162 pp. Price, $1.00.

The most important demographic events during the past fifteen years have been the rise in the birth rate in many countries of North America and northwestern Europe and the widening gap between the birth and death rates of the underdeveloped countries of the world that has resulted from the application of modern public health measures. This report of the round table on Current Research in Human Fertility held during the 1954 Annual Conference of the Milbank Memorial Fund presents papers dealing with both of these events.

Summaries are presented of three studies of fertility planning and reproductive behavior in areas of high fertility—India, Jamaica, and Puerto Rico. These are followed by reports on the influence of declining mortality on Swedish reproductivity and on recent trends of the fertility of Catholics in the United States.

But the major part of the round table discussion was given over to a description of current research projects either under way or being planned in the United States. Included is a progress report on the monograph on fertility based on the 1950 Census being prepared under the sponsorship of the Social Science Research Council, a description of the study of fertility expectations being carried out by the Scripps Foundation for Research in Population Problems and the Social Science Survey Center of the University of Michigan, and a proposal for a study of social and psychological factors affecting fertility building upon the experience gained in and the knowledge derived from the Indianapolis study of fertility. HAROLD F. DORN

The Municipal Year Book, 1955—Edited by Clarence E. Ridley and Orin F. Nolting. Chicago, Ill.: International City Managers' Association (1313 East 60th St.), 1954. 588 pp. Price, $10.00.

The chapter on Health Developments in 1954 in the current Municipal Year Book was written by Ira V. Hiscock,

as in recent years. Among the newer health programs mentioned are vocational rehabilitation, air pollution, and fluoridation. He describes some of the recent reorganizations of local health services, such as the plan of the Georgia Board of Health for 38 health districts for the 159 counties. Other examples are the transfer of the health facilities of Asheville, N. C., to Buncombe County and the Marion County (Indianapolis) Health and Hospital Corporation created by a 1951 law and upheld by a 1954 court decision to handle all Indianapolis and Marion County health problems.

These developments in the health field parallel similar developments in metropolitan area government described in other sections of the Year Book—metropolitan-type special districts, transfers of particular functions, and creation of joint city-county organizations. For example, a new Metropolitan St. Louis Sewer District creates a single administration for sanitary and storm water sewer facilities for both St. Louis and urbanized areas in the adjacent county. Joint city-county planning operations were established in metropolitan areas of Charlotte, N. C., Evansville, Ind., and Springfield, Ohio.

These various developments are reflected in a ten-year decrease, from 1942 to 1952, of more than one-fifth in the total number of governmental units in the United States, from nearly 150,000 to fewer than 117,000. The decreases were most significant in number of school districts. An article on Metropolitan and Fringe Area Developments analyzes fringe area annexations in more than 400 cities during 1954.

This Year Book has a wealth of information on municipal governments. A table showing salaries of heads of departments makes it possible to compare health officers' salaries with those of other department heads. A new chapter reviews cultural activities available in cities. The volume continues to be a prime source of useful information.

EDITH M. BOYD

Perspectives and Horizons in Microbiology—A symposium edited by Selman A. Waksman. New Brunswick, N. J.: Rutgers University Press, 1955. 220 pp. Price, $3.50.

On July 7, 1954, the Institute of Microbiology at Rutgers University was formally and fittingly dedicated and, as readers of this book will note, an interesting symposium was assembled dealing with the complex activities of the microorganisms.

Sixteen individuals whose names should prove familiar with this most important field contributed to the symposium, the subject matter of this book.

The established influence of the antibiotics on the course of disease emphasizes the value of qualified opinion on the minds not only of those who are concerned with therapeutic medicine, but also on the thinking of those who continue to probe the mysteries in the field of microbiology. For the latter group, particularly, this book should serve as a stimulating influence, an important fact since there are still so many unanswered questions. Those who contributed to this book encourage us to believe that we may look hopefully to the future for continuing progress in this field because of opportunities offered to probing minds that are engaged in the field of biological research.

Two-thirds of a century spans the era from the opening of the Pasteur Institute to the projection of a development with a similar purpose at Rutgers University. A most welcome addition indeed to the limited ranks of institutions dedicated to the furtherance of research in a field which offers so much promise for the betterment of mankind.

C. F. WILINSKY

Nutrition Sourcebook—By Oliver E. Byrd. Stanford, Calif.: Stanford University Press, 1955. 370 pp. Price, $7.50.

Four hundred annotated articles are assembled in this sourcebook. They are selected from literature on nutrition published from 1944–1955. (Some of the earlier references might well be omitted except when historical data are of value.) The book touches upon such fields as the international aspects of nutrition; the relation of nutrition to pregnancy, emotional health, dental health, and geriatrics; and the role of nutrition in industry, school lunch programs, and public health.

A compilation of articles is useful but is apt to give a spotty coverage of the field. Some of the subjects need several carefully chosen references in order to provide the reader with well rounded current knowledge of the subject. Following many of the topics a summary statement is needed or the less informed reader may jump to conclusions. This is especially the case when only one point of view is given or when divergent findings are presented.

ELIZABETH K. CASO

Books Received

Listing in this column acknowledges the receipt of books and our appreciation to the senders. Space and the interests of readers will permit review of some, but not all, of the books listed.

ACTIVATING CONCERN, THE. CHURCHES AND SOCIAL WELFARE. VOL. I. HISTORICAL AND THEOLOGICAL BASES. E. Theodore Bachmann. New York: National Council of the Churches of Christ in the U.S.A., 1955. 120 pp. Price, $3.75.

ADMINISTRATIVE MEDICINE. TRANSACTIONS OF THE THRID CONFERENCE OCTOBER 6–8, 1954. Packanack Lake, N. J.: Josiah Macy, Jr. Foundation, 1955. 172 pp. Price, $3.00.

ATOMIC ENERGY RESEARCH AT HARWELL. K. E. B. Jay. New York: Philosophical Library, 1955. 144 pp. Price, $4.75.

BUILDINGS OF TOMORROW: GUIDE FOR PLANNING SETTLEMENTS AND COMMUNITY BUILDINGS. Fern M. Colborn. New York: Morrow, 1955. 159 pp.

CANCER AND COMMON SENSE. George Crile, Jr. New York: Viking, 1955. 118 pp. Price, $2.75.

CARDIOVASCULAR SURGERY, INTERNATIONAL SYMPOSIUM ON. HENRY FORD HOSPITAL. PROCEEDINGS OF THE SYMPOSIUM HELD AT HENRY FORD HOSPITAL, DETROIT, MICH., MARCH, 1955. Conrad R. Lam, Editor. Philadelphia, Pa.: Saunders, 1955. 543 pp. Price, $12.75.

CHANGING SCENE, THE. CHURCH AND SOCIAL WELFARE. VOL. II. CURRENT TRENDS AND ISSUES. Horace R. Cayton and S. M. Nishi. New York: National Council of the Churches of Christ in the U.S.A., 1955. 214 pp. Price, $3.75.

CLASSICS OF BIOLOGY. August P. Suner. New York: Philosophical Library, 1955. 337 pp. Price, $7.50.

COMMUNITY PROGRAMS FOR MENTAL HEALTH. Ruth Kotinsky and Helen L. Witmer. Cambridge, Mass.: Harvard University Press, 1955. 358 pp. Price, $5.00.

DRIED BCG VACCINE. World Health Organization. Monograph Series No. 28. Yoji Obayashi. New York: Columbia University Press, 1955. 220 pp. Price, $5.00.

DISTRICT NURSING. Eleanor J. Merry and Iris D. Irven (2nd ed.). Baltimore, Md.: Williams and Wilkins, 1955. 262 pp. Price, $4.50.

EDUCATION FOR PERSONAL AND FAMILY LIVING. A WORKING GUIDE FOR COLLEGES. REPORT OF THE CENTRAL ATLANTIC REGIONAL TEACHER PREPARATION PROJECT. New York: American Social Hygiene Association, 1955. 145 pp. Price, $1.00.

ESSENTIALS OF CHEMISTRY. Gretchen O. Luros (6th ed.). Philadelphia, Pa.: Lippincott, 1955. 544 pp. Price, $4.75.

GROUP PROCESSES. TRANSACTIONS OF THE FIRST CONFERENCE SEPTEMBER 26–30, 1954. Bertram Schaffner, Editor. Packanack Lake, N. J.: Josiah Macy, Jr. Foundation, 1955. 334 pp. Price, $5.50.

HANDBOOK OF ACOUSTIC NOISE CONTROL. VOL. I. PHYSICAL ACOUSTICS. Edited by R. H. Bolt, et al. SUPPLEMENT TO VOL. I. Edited by S. J. Lukasik and A. W. Nolle. Wright Air Development Center. Washington, D.C.: Office of Technical Services, Department of Commerce. Price, $4.00.

HEALTH, CULTURE, AND COMMUNITY. CASE STUDIES OF PUBLIC REACTIONS TO HEALTH PROGRAMS. Benjamin D. Paul, Editor. New York: Russell Sage Foundation, 1955. 493 pp. Price, $5.00.

HEART DISEASE. Geoffrey Bourne. Chicago, Ill.: Regnery, 1955. 135 pp. Price, $2.25.

HOW TO REDUCE SURELY AND SAFELY. Herbert Pollack. New York: McGraw-Hill, 1955. 157 pp. Price, $2.95.

IMPORTANCE OF PHYSIOTHERAPY IN THE TREATMENT OF SICK CHILDREN. J. J. Jewry-Harbert. New York: de Graff, 1955. 84 pp. Price, $2.50.

INFANT NUTRITION IN THE SUBTROPICS AND TROPICS. World Health Organization: Monograph Series, No. 29. D. B. Jelliffe. New York: Columbia University Press, 1955. 237 pp. Price, $5.00.

INVENTORY OF SOCIAL AND ECONOMIC RESEARCH IN HEALTH. 1955 edition. New York: Health Information Foundation, 1955. 266 pp.

MAP—ATLAS OF DISEASES. Plate 17. New York: American Geographical Society, 1955. Folded $1.25; flat, $1.50.

MENTAL HYGIENE IN PUBLIC HEALTH. Paul V. Lemkau (2nd ed.). New York: McGraw-Hill, Blakiston Division, 1955. 486 pp. Price, $8.00.

OFFICIAL METHODS OF ANALYSIS OF THE ASSOCIATION OF OFFICIAL AGRICULTURAL CHEMISTS (8th ed.). Washington, D.C.: Association of Official Agricultural Chemists, 1955. 1008 pp. Price, $12.00 domestic; $12.50 foreign.

PARTICLE SIZE DETERMINATION. R. D. Cadle. New York: Interscience Publishers, 1955. 303 pp. Price, $5.50.

PEDIATRIC YEARS. Louis Spekter. Springfield, Ill.: Thomas, 1955. 734 pp. Price, $12.50.

PHARMACOPOEA INTERNATIONALIS (Vol. II). World Health Organization. New York: Columbia University Press, 1955. 350 pp. Price, $6.75.

PRACTICAL NURSE AND HER PATIENT, THE. Fern A. Goulding and Hilda M. Torrop. Philadelphia, Pa.: Lippincott, 1955. 326 pp. Price, $4.25.

PRESENT-DAY PSYCHOLOGY. Edited by A. A. Roback. New York: Philosophical Library, 1955. 995 pp. Price, $12.00.

PROBLEMS IN AMOEBIASIS. Charles W. Rees. Springfield, Ill.: Thomas, 1955. 119 pp. Price, $4.75.

PROMOTION OF MATERNAL AND NEWBORN HEALTH. Papers presented at the 1954 Annual Conference of the Milbank Memorial Fund. New York: Milbank Memorial Fund, 1955. 229 pp. Price, $1.50.

PUBLIC HEALTH. ITS PROMISE FOR THE FUTURE. Wilson G. Smillie. New York: Macmillan, 1955. 501 pp. Price, $7.00.

QUESTIONS OLDER PEOPLE ASK. Henriette Kish. New York: Dutton, 1955. 156 pp. Price, $2.50.

REVIEW OF CURRENT RESEARCH AND DIRECTORY OF MEMBER INSTITUTIONS. Engineering College Research Council of the American Society for Engineering Education. New York: New York University, Engineering College Research Council, 1955. 352 pp. Price, $2.00.

SCHOLARSHIPS, FELLOWSHIPS AND LOANS. VOL. III. S. Norman Feingold. Cambridge, Mass.: Bellman, 1955. 471 pp. Price, $10.00.

SKIN DISEASES. Reginald T. Brain. Chicago, Ill.: Regnery, 1955. 158 pp. Price, $2.25.

STRENGTHENING FAMILY LIFE EDUCATION IN OUR SCHOOLS. REPORT OF THE MIDWEST PROJECT ON IN-SERVICE EDUCATION OF TEACHERS. New York: American Social Hygiene Association, 1955. 185 pp. Price, $1.00.

STUDIES ON EXPENDITURE OF ENERGY AND CONSUMPTION OF FOOD BY MINERS AND CLERKS, FIFE, SCOTLAND, 1952. Medical Research Council Special Report Series No. 289. R. C. Garry; R. Passmore; Grace M. Warnock; and J. V. G. A. Durnin. New York: British Information Services, 1955. 70 pp. Price, $.90.

TEXTBOOK OF OCCUPATIONAL THERAPY. E. N. M. O'Sullivan. New York: Philosophical Library, 1955. 319 pp. Price, $10.00.

TUBERCULOSIS. Cedric Shaw. Chicago, Ill.: Regnery, 1955. 160 pp. Price, $2.25.

UNDERSTANDING SURGERY. Robert E. Rothenberg. New York: Pocket Books, 1955. 620 pp. Price, $.50.

UNEMPLOYMENT INSURANCE SCHEMES. STUDIES AND REPORTS No. 42. Washington, D.C.: International Labor Office, 1955. 254 pp. Price, $1.50.

VARICOSE VEINS. R. Rowden Foote. Chicago, Ill.: Regnery, 1955. 110 pp. Price, $2.25.

VITAL STATISTICS OF THE UNITED STATES. VOL. II. MORTALITY DATA. Prepared under the supervision of Halbert L. Dunn. Washington, D. C.: Gov. Ptg. Office, 1955. 505 pp. Price, $4.00.

A Selected Public Health Bibliography with Annotations

Healthful Environment—Among the topics formally discussed at the recent annual educational conference of the National Association of Sanitarians were new pathogens, radiation hazards, suburban sewage disposal, and horizons beyond the "filth concept." Others than those who attended will profit by reading the last word in these matters.

ANON. Sanitarians Measure Future's Problems. Modern San. 7, 9:29 (Sept.), 1955.

The Real Hazard—Sanitation is being confused with custodial services in the preparation of food, assert these writers, and as a result the things that really affect the sanitary quality of food are being overlooked. The lip-sticked tumbler and the egg-encrusted fork are not the chief offenders—human frailty is. The dietitian and the manager can do more to insure the safety of food than the health inspector.

BOND, R. G., and STAUFFER, L. D. Food Sanitation and/or the Infectious Process. J. Am. Dietet. A. 31, 10:993 (Oct.), 1955.

All About Bats—A picture you will remember is the photograph of the wall of a Texas cave literally papered with resting bats, especially when you learn that the laboratory demonstrates a high level of rabies infection in the bat population of the studied cave. A preceding paper reports a finding of rabies in a Montana bat.

EADS, R. B., et al. Wildlife Rabies in Texas. Pub. Health Rep. 70, 10:995 (Oct.), 1955.

Junior Trail Blazers—If you have any bent for history whatever you will enjoy these thumbnail sketches of two dozen pioneers who did some of the pioneering during their student days. Some of the people you will know all about; some you've probably never heard of.

GIBSON, W. C. Contributions of Medical Undergraduates to the Science of Preventive Medicine. Pub. Health Rep. 70, 10:935 (Oct.), 1955.

Issues to Be Settled—Should we work toward a unified health and sickness service? Should categorical approaches to preventive medical care be abandoned? Should comprehensive medical care be for special groups only? Is large-scale organization for payment of care the major condition for making such services available? Examination of these four basic questions leads naturally to much provocative discussion.

GOLDMANN, F. Comprehensive Medical Care: Basic Issues. Social Service Rev. 29, 5:267 (Sept.), 1955.

E. coli Serogroups—"The last chapter has definitely not been written on the control of diarrhea of the newborn" conclude these reviewers of current epidemiologic and therapeutic findings. The New York State control program is usefully described.

GREENE, D. C., and ALBRECHT, R. M. Recent Developments in Diarrhea of the Newborn. New York State J. Med. 55, 19:2764 (Oct. 1), 1955.

Community Surveys—Because of its necessary spelling out of the issues, this explanatory and interpretive picture (drawn for our British brethren) of our strictly American ways of community surveying becomes a useful

play-back for many of us who may have become so intimately involved in such ventures that we fail to see the woods because of the trees we've bumped into.

HISCOCK, I. V. Health Surveys. Royal Soc. Promotion Health J. 75, 9:66 (Sept.), 1955.

Screening Pros and Cons—Two health officers set down their ideas of the essentials for health department screening programs: (1) the health department must be meeting its other community needs; (2) all agencies concerned must be giving full—not lip—support; (3) the public must really be informed; (4) basic facilities for follow-up must exist; and (5) the teamwork philosophy really must govern. This excellent paper is only one of 16 provocative discussions on screening for asymptomatic disease.

HOLMES, E. M., JR., and BOWDEN, P. W. Screening for Asymptomatic Disease by Health Departments. J. Chronic Dis. 2, 4:384 (Oct.), 1955.

A. R.—Would you know how to go about resuscitating a baby or a young child? Is this sort of first aid a part of public health practice? If your answer to the first question is No and to the second Yes, then you'll surely want to study tilting-visceral shift—amply and usefully illustrated.

RICKARD, H. J. A New Method of Manual Artificial Respiration for Infants and Small Children. J.A.M.A. 159, 8:754 (Oct. 22), 1955.

Team Case Conference—Those who are concerned, as so many of us are becoming concerned with the creation of special services for community mental health, will find much of interest in this British symposium in which a medical director, a special consultant, and a psychiatric social worker take part.

SODDY, K., et al. The Promotion of Mental Health in the Very Early Years. Roy. Soc. Promotion Health J. 75, 9:700 (Sept.), 1955.

Complexity the Keynote—Each of the participants in the symposium acknowledges the relation between carbohydrates and caries, but all stress the pointed dangers of oversimplification for cariogenic action is not a simple phenomenon.

SOGNNAES, R. F., et al. Effects of Sugars and Other Carbohydrates on the Teeth. J. Am. Dent. A. 51, 3:269 (Sept.), 1955.

Parameters, Significance Tests, et al.—Though there are 50-odd pages of fine print "this paper is neither intended to be a textbook nor is it designed to make statisticians of the readers." What it hopes to do is to acquaint microbiologists "with some of the terminology of the field of statistics and some of the concepts underlying the various methods presented." These introductory remarks should help you decide whether or not you will want to plunge into those 50-odd deep pages.

STEARMAN, R. L. Statistical Comment in Microbiology. Bact. Rev. 19, 3:160 (Sept.), 1955.

What Women Wish to Know—Listed in some detail are the topics included in an informal health course for women employees of an Air Force base. It is asserted that the participants got the sort of information they wanted about personal health practices and they went their ways with a working knowledge of the health and medical services available to them.

THRASHER, G. V., and RAMSAIER, S. S. Women Employees Hear About Health Practice. Am. J. Nursing 55, 10:1234 (Oct.), 1955.

Much About Q—As Q fever is something we need to keep informed about, this detailed recounting of the history, the epidemiology, the useful preventive measures, and the current means of diagnosis and treatment should provide about all the information one

might need. It appends 123 references for the insatiable ones in the audience.

WENTWORTH, B. B. Historical Review of the Literature on Q Fever. Bact. Rev. 19, 3:129 (Sept.), 1955.

Who Gives Guidance?—Here is another and a particularly provocative discussion of the need for MCH clinics, or the lack thereof (in England, where everyone is supposed to get all sorts of free advice from his panel doctor). Because of its distance-objectivity this paper can furnish the projective reader with a lot to mull over. Much of the remainder of this issue of that unique and stimulating journal is given over, as one would expect, to health educational shop talk. The unusualness of such a paper in this specialized medium lends point, however, to the educational aspects of this direct service. You will like both parts of this issue.

WILLIAMS, C. D. The Maternity and Child Welfare Centre. Health Ed. J. 13, 3:167 (Sept.), 1955.

Our Unwelcome Guests—Three papers from a symposium on parasitism in our southeast cover: (1) the history of parasitic diseases ("most of the intestinal protozoa were indigenous in the American Indian"); (2) current disease incidence ("remarkable declines have been registered in the incidence and intensity of certain parasitic infections"); and (3) the veterinary problems of animal parasites. All three are of interest outside the area of their particular audience.

YOUNG, M. D., et al. Parasitism in South Eastern United States. Pub. Health Rep. 70, 10:957 (Oct.), 1955.

If additional information is desired regarding the articles listed in this Bibliography, please communicate directly with the publication in which they appeared; the addresses are furnished for your convenience.

Am. J. Nursing (American Journal of Nursing), 2 Park Ave., New York 16, N. Y.
Bact. Rev. (Bacteriological Reviews), Williams and Wilkins, Mt. Royal and Guilford Aves., Baltimore 2, Md.
Health Ed. J. (Health Education Journal), Tavistock House, Tavistock Sq., London, W.C. 1, England.
J.A.M.A. (Journal of the American Medical Association), 535 N. Dearborn St., Chicago, Ill.
J. Am. Dent. A. (Journal of the American Dental Association), 222 E. Superior St., Chicago, Ill.
J. Am. Dietet. A. (Journal of the American Dietetic Association), 620 N. Michigan Ave., Chicago, Ill.
J. Chronic Dis. (Journal of Chronic Diseases), C. V. Mosby Company, 3207 Washington Boulevard, St. Louis 3, Mo.
Modern San. (Modern Sanitation), 855 Avenue of the Americas, New York 1, N. Y.
New York State J. Med. (New York State Journal of Medicine), 292 Madison Ave., New York 17, N. Y.
Pub. Health Rep. (Public Health Reports), Gov. Ptg. Office, Washington, D. C.
Roy. Soc. Promotion Health J. (Royal Society for the Promotion of Health Journal), 90 Buckingham Palace Road, London, S.W. 1, England.
Social Service Review (University of Chicago, School of Social Service Administration). 5750 Ellis Ave., Chicago 37, Ill.

The Albert Lasker Awards for 1955

Nineteen hundred and fifty-five marks the tenth annual presentation of Albert Lasker Awards by the American Public Health Association. The Lasker Awards are given by the Albert and Mary Lasker Foundation to individuals and groups for outstanding contributions in research related to diseases which are the main causes of death and disability, and for distinguished service in the field of public health administration.

The awards were conceived not only to honor the recipients and dramatize their accomplishments, but also to arouse increased professional and public interest in medical research and public health administration and to aid in the rapid dissemination of vital new health information to the peoples of the earth.

In the nine years since their founding, the Albert Lasker Awards of the American Public Health Association have come to be regarded among the nation's primary medical honors. Nine of the winners have later received Nobel Prizes.

The following citations were presented to the recipients at the Second General Session of the Association's Annual Meeting in Kansas City, Mo., on November 17, 1955. Each recipient received a statuette of the Winged Victory of Samothrace, together with a beautiful leather-bound and illuminated citation. Individual winners received checks for $1,000.

Gaylord W. Anderson, M.D., Mayo professor and director, School of Public Health, University of Minnesota, Minneapolis, Minn., was chairman of the Awards Committee. The citations were presented by Herman E. Hilleboe, M.D. The citations follow:

AWARD IN PUBLIC HEALTH ADMINISTRATION

Robert D. Defries, M.D., D.P.H.
Director, School of Hygiene,
University of Toronto

Seldom is there combined in one man great scientific knowledge and judgment, together with the personality and organizing ability to carry through new technical advances to their effective application in the control of disease. From his position as head, and to a considerable extent the creator, of the Connaught Medical Research Laboratories and the School of Hygiene of the University of Toronto, Robert Defries has played a unique part in the development of preventive medicine and public health in Canada. Because of his outstanding qualities his work has been widely recognized in the United States and in many other countries; his consistent support of understanding and cooperation between American and Canadian scientists and health officers has contributed importantly to the happy relationships which now exist.

The public health professions in the United States are deeply in debt to the Connaught Laboratories for developing a method of large-scale production and supplying nearly all the virus used in the successful field trials of the Salk poliomyelitis vaccine in both countries in 1954. The fruitful use in 1955 of this virus in Canada is also founded on the work at the Connaught Laboratories under Dr. Defries.

His single-handed stimulation and guidance of the Canadian Public Health Association and its journal; his tireless and unassuming labors for the advancement of knowledge; for the control of disease, and for the training and inspiration of health workers are all deserving of our wholehearted admiration and gratitude.

AWARD IN MEDICAL RESEARCH

Karl Paul Link, Ph.D.
Professor of Biochemistry,
University of Wisconsin

To Karl Paul Link an Albert Lasker Award is presented for his outstanding contributions which have resulted in a greater understanding and improved treatment of thromboembolic conditions.

It had long been recognized that the ingestion of spoiled sweet clover produced hemorrhagic disease in cattle, but the responsible agent was unknown. Professor Link accepted this challenge about 1933 and after seven years of intensive investigation reported the successful culmination of his work and that of his co-workers with the recognition, isolation, and development of the formula and synthesis of dicumarol in a classic series of papers. This opened a gateway to the further study of the mechanism of blood clotting and to the treatment of many important diseases of the heart and blood vessels for which little had been done in the past. Clinical investigators in all civilized countries have continued to use this drug for increasing numbers of patients. His work also encouraged others to develop new compounds with similar actions. Dr. Link and his co-workers have continued their investigations and have reported the actions of additional compounds which are being used clinically today.

In view of the vast numbers of individuals affected by thromboembolic diseases each year and the fundamental steps taken by Dr. Link toward the solution of these problems, he has earned the deep gratitude of the medical profession and the lay public of this and coming generations.

JOINT AWARD IN MEDICAL RESEARCH

Department of Surgery, School of Medicine, University of Minnesota

C. Walton Lillehei, M.D.

Morley Cohen, M.D.

Herbert Warden, M.D.

Richard L. Varco, M.D.

In spite of bringing together the fruits of research in physiology, medicine and surgery, the correction of many defects in the circulatory system has been palliative in nature. To perform these procedures so as to restore the normal circulation of the patient has remained an unreached goal. The main obstacle has been the lack of a method which would allow surgery within the open heart under direct vision.

The brilliant and imaginative studies of Drs. Lillehei, Cohen, Warden, and Varco have clarified many of the problems of surgery within the heart by using a donor, a person whose circulation would supply oxygen and sustain the patient whose heart must be opened. These men showed that the oxygen requirements of the body are significantly less than previously believed. They also showed that the requirements of the heart are dramatically reduced when relieved of its pumping duties.

These discoveries made possible the consideration of simple and practical methods for by-passing the cardiac and pulmonary circulation. Thus, linking the circulatory systems of the patient and donor with the aid of a simple pump assures the patient of a continuous controllable supply of oxygenated and chemically balanced blood.

Already the cross-circulation technic has been successfully employed for the intracardiac correction of congenital malformations of the heart in several clinics.

Inevitably improvements will be made in this method and new technics will be developed as a result of the stimulus of this important work. It is now possible to envision curative surgery for the vast majority of congenital cardiac defects and improved technics for the repair of acquired heart lesions.

GROUP AWARD IN PUBLIC HEALTH ADMINISTRATION

Menninger Foundation and Clinic

Karl Menninger, M.D.

William Menninger, M.D.

The Menninger Foundation and Clinic headed by Drs. Karl and William Menninger has provided a sustained and highly productive attack against mental disease for many years. Inspired by their father, Dr. Charles Frederick Menninger, these brothers have developed an outstanding institution which has served as an example for other mental disease hospitals. Not committed to a single form of psychotherapy, they have utilized the best features of all methods in the care of their patients.

The Menningers have performed a great service in demonstrating the manner by which the majority of patients can be discharged from mental hospitals and the periods of hospitalization markedly reduced. They have influenced the legislative bodies of many states to increase the funds for the care of mental disease and to use these funds wisely, especially in the procuring of trained personnel for the care of these patients. As a result of their leadership, Topeka has become a center for the training of additional psychiatrists so that more than 100 from widespread areas throughout the world are being trained there at all times. The influence of the Menninger Foundation and Clinic in increasing professional and public interest in the care of the mentally ill cannot be measured, but it is indelibly recorded as a great service to mankind.

GROUP AWARD IN PUBLIC HEALTH ADMINISTRATION

Nursing Services of the U. S. Public Health Service

Lucile Petry Leone, R.N. Pearl McIver, R.N. Margaret Arnstein, R.N.

The Nursing Services of the U. S. Public Health Service have significantly furthered the interests of public health and made a notable contribution to the advancement of the well-being of this country through leadership in public health nursing and through studies and research in the manifold fields of nursing.

From the field of nursing education, Lucile Petry Leone was called into wartime service to the difficult task of recruitment and training of personnel to meet the expanded need for nursing services in the military and civil populations. Her development and direction of the Cadet Nursing Program was a notable contribution to the war effort, achieved with strict adherence to the high standards that had already been realized by the nursing profession. This accomplishment paved the way for the needed postwar expansion of nursing service to the American public, a program in which the nursing resources of the U. S. Public Health Service, under the guidance and direction of Mrs. Leone, have played a role of leadership and guidance.

In Pearl McIver public health nursing has had a forceful leader who has contributed immeasurably to the general understanding and appreciation of the role of the public health nurse and of the contribution that she makes to the over-all program of community health service and protection. The development of nursing programs in state and local health departments throughout the nation and their expansion into one of the bulwarks of public health are due in no small measure to the leadership, the enthusiasm and the farseeing guidance and stimulus provided by Miss McIver. Her devotion to the highest ideal of training and service has aided immeasurably in the development of the present professional standards of public health nursing.

The development of a broad and comprehensive nursing program geared to fit the needs of the American public within the limitations of available funds and personnel requires careful study of the nursing resources of the nation. Charged with the responsibility for appraisal of nursing needs and resources, Margaret Arnstein has furnished comprehensive national leadership and has given invaluable stimulation and guidance to state and local nursing programs in self-appraisal of their respective problems. Her studies have constituted a pattern on which future programs of nursing research can be based. With a broad knowledge and deep appreciation of the potentialities of public health and hospital nursing services and their contribution to human welfare Miss Arnstein has provided outstanding counsel, guidance, and leadership in the elevation and maintenance of the present high standards of nursing service in the United States.

GROUP AWARD IN MEDICAL RESEARCH

The Hoffmann-La Roche Research Laboratories, and the Squibb Institute for Medical Research

Walsh McDermott, M.D.

Carl Muschenheim, M.D.

Edward H. Robitzek, M.D.

Irving J. Selikoff, M.D.

The discovery of the action of derivatives of isonicotinic acid against the growth of the tubercle bacillus was announced in the spring of 1952. The new day of treatment of tuberculosis had been heralded previously by the demonstration of the restraining effects of the sulfones and sulfonamides and was soon brightened by the discovery of even more active therapeutic agents. But the hydrazides of isonicotinic acid were soon found to surpass any other known substance in the degree of their specificity against the bacillus, their power to diminish its pathogenicity in experimental animals and their easy diffusibility through healthy and diseased tissues.

The shortcomings of some of these drugs (the thiosemicarbazones) because of their toxicity prompted the research staffs of two great manufacturers of drugs to search for other compounds of the same class. Isonicotinic acid hydrazide, selected as a starter of numerous syntheses, was found to be more promising than any others tested. Its strong antagonism toward tuberculosis in animals, in some respects unique, was promptly demonstrated, and simultaneously its toxicity was shown to be relatively low.

Two groups of physicians followed immediately with clinical trials among tuberculosis patients. In a remarkably short period of time this cooperative endeavor established the great efficacy of isoniazid, its superiority over all other agents for the treatment of tuberculosis meningitis and generalized miliary tuberculosis and its suitability for prolonged therapy.

The discovery, now considered universally to be of the first order, has influenced the principles of treatment and control of tuberculosis profoundly. This contribution of the investigators distinguishes them as true scientists and humanitarians.

Association News

OFFICERS, 1955–1956

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SEDGWICK MEMORIAL MEDAL TO DR. CHESLEY FOR 1955

ALBERT J. CHESLEY, M.D.*

Albert J. Chesley, M.D., secretary and executive officer, Minnesota State Board of Health, St. Paul, Minn., was the 25th recipient of the Sedgwick Memorial Medal, presented at the First General Session of the 83rd Annual Meeting, American Public Health Association, on November 15, in Kansas City, Mo.

The citation was presented by Wilson G. Smillie, M.D., Dr.P.H., chairman of the Sedgwick Memorial Committee. The citation follows:

It is my great privilege to present the Sedgwick Memorial Award for the year 1955 to Albert Justus Chesley, M.D., who was one of the greatest of a distinguished group of state health officers.

Dr. Chesley was born in Minneapolis in 1877. He had two life experiences among many that he enjoyed narrating. The first was his service in the Spanish-American War as a volunteer infantryman in 1898. His first public health job, in 1902, was as part-time laboratory assistant in the State Health Department while he was in college. He did water and milk bacteriology until the end of the college year. When summer came he worked on ranches and in lumber camps, mines, and as a crew member of the steamboat "Winatche."

When he was graduated from medical school in 1907 he became full-time assistant bacteriologist of the state laboratory, then bacteriologist, then assistant director.

Dr. Hibbert Hill, one of America's early epidemiologists, came to Minnesota in 1905 as professor of pathology and bacteriology and assistant director

* Deceased

of the State Laboratories. The major epidemiologic problems were typhoid fever, diphtheria, and smallpox. Dr. Chesley absorbed his training in epidemiology from Hill. In 1910 Chesley joined the State Division of Epidemiology and when Hill left in 1912 Chesley was promoted to be director of the division. He was 35 years old.

World War I called Dr. Chesley to France on May 18, 1918, as public health adviser to the American Red Cross. He was called to Poland as chief of the Red Cross medical staff in March, 1919, and soon became commissioner of the entire program, returning to the United States in October, 1920. This was the second great experience of his life about which he had a wealth of fascinating narrative.

He returned to Minnesota as director of preventive medicine in 1920. On November 10 he was appointed acting health officer and on May 4, 1921, as executive secretary of the State Board of Health. He served in this capacity until his death on October 17, 1955. His total public health service, all in Minnesota, may be summarized as follows:

Part-time laboratory assistant, 1901–1907	6 years
Full-time laboratory service, 1907–1910	3 years
Epidemiology and communicable disease control, 1910–1920	10 years
Health officer of the state, 1921–1955	34 years
A magnificent total of	53 years

What a record! What an achievement! No other health executive in America has even approached this length of service.

In 1910 Minnesota had a population of 1,978,000. In 1954, its population had grown to 3,159,000. The birth rate in 1954 was 25; in 1910 it was 22. Dr. Chesley told me that he had no accurate record of the infant death rate in 1910, but it was well over 100. In 1954 it was 22.3.

Specific death rates may be compared:

	1910		1954	
	Number of Deaths	Rate per 100,000 Population	Number of Deaths	Rate per 100,000 Population
Typhoid fever	350	17.7	0	0
Diphtheria	399	20.2	2	..
Tuberculosis	2,039	103.1	138	4.9

Dr. Chesley was the most modest of men and would never admit that this striking conservation of life and prevention of illness was due to his efforts. Certain it is, however, that he directed and guided the program and in no small way was personally responsible for these outstanding results. What greater monument can we erect to a man than a great multitude of children who have been born and, instead of perishing during the first 12 months, have thrived healthfully, grown to adulthood, and had families of their own.

Dr. Chesley's greatest, though least spectacular, achievement was his service as secretary of the two associations serving the state, territorial, and provincial health officers where he served nearly 20 years. He was the association. He gave wise guidance to a whole generation of young inexperienced physicians who were catapulted into the great responsibilities of state health officer in one of the various states without experience and without the least understanding of their responsibility. Chesley wrote to them all—thousands of letters! His correspondence was always in long hand, almost illegible, but well worth penetration and translation. He moulded state health policy of this nation through many critical years. He was wise, experienced, quiet, modest to a fault, of highest principles, deep under-

standing, sympathetic, spiritually devoted to his work and to his people.

The many honors he received, including the Presidency of the APHA in 1930, were accepted with quiet, shy, embarrassment. He was the most modest of men.

The mould was broken when they made A. J. Chesley. We shall not see his like again.

We cannot be sad in making this presentation for it is a truly happy occasion. Because of an inadvertent local circumstance over which he had no control, Dr. Chesley was unable to attend this annual meeting, an occasion that he so seldom missed.

But his spirit is with us, and to him we extend our best wishes and our deepest appreciation to a great state health officer, and a public health statesman of high order.

Response by Robert N. Barr, M.D., Minneapolis, Minn., who succeeded Dr. Chesley

I have been requested by Mrs. Chesley to accept this Sedgwick Memorial Award for her and the family and to express her appreciation to the American Public Health Association for this honor bestowed on Dr. Chesley. He had been informed about this award and, in preparing his response, he had intended to review the accomplishments of the men of his vintage and of those who had preceded him; but in the typical Chesley manner there was to be no mention of his own record. In his recent letter to Dr. Wilson G. Smillie relative to the various awards he had received in the past, Dr. Chesley stated: "Will try to give details of past life. Truth is, I have been lucky in being among those who did things so got some credit for their doing. It is like war citations. Those who did the business got killed, so some who ducked or ran in time got credit."

Dr. Chesley was active until the very end. Even the day before his death he wrote several letters to his friends about specific public health plans and problems. Dr. Chesley was primarily responsible for the transfer of the Indian Health Program from the Bureau of Indian Affairs to the U. S. Public Health Service. I would like to quote from two of his last letters as follows: "Now the Public Health Service has Indian health which I have wanted for many years. That job is done, although every state with Indians should do its best in cooperation with the Public Health Service to make it a success. I have faith in the Public Health Service; the Indian states and Alaska doing the job."

Dr. Chesley had always recognized the value of a close physical and working relationship between the Minnesota Department of Health and the state university. His leadership, interest, and support of the public health program was a prime factor in the establishment of the School of Public Health at the University of Minnesota. Friends are now contributing to the Albert J. Chesley Memorial Fund for a lectureship in public health to be handled through the Greater University Fund at the university.

Dr. Chesley needs no memorial. His principles and interests will be continued far into the future by his many friends and associates whom he has interested, assisted, and guided in public health. We shall long remember his whimsical stories which, when carefully examined, held the answers which guided all of us to the right solutions of the many problems for which we so frequently requested assistance from him. Surely we can say about this man, "well done thou good and faithful servant."

PROFESSOR HISCOCK IS APHA PRESIDENT

Ira Vaughan Hiscock, D.Sc., professor and chairman of the Department of Public Health, Yale University, chairman of the University Board of Health for student health affairs, and consultant in the Grace-New Haven Community Hospital, became president of the American Public Health Association November 18, 1955, after having been chosen president-elect at the October, 1954, Annual Meeting.

IRA VAUGHAN HISCOCK, D.Sc.

Professor Hiscock was born in Farmington, Maine. He received the degrees of B.A. in 1914 and M.A. in 1916 from Wesleyan University and the M.P.H. in 1921 from Yale University. He received an honorary Sc.D. from Wesleyan and an honorary M.A. from Yale, both in 1931. He is a retired colonel of the U. S. Army, with some 32 years of service as a Reserve Officer and eight years of active duty with the Division Surgeon's Office of the 30th Division, A.E.F. in World War I, and as chief of the Public Health Section of the Civil Affairs Division of the War Department in World War II.

From 1914 to 1918 Dr. Hiscock was bacteriologist in the Connecticut State Department of Health. He organized the city public health laboratory in Columbia, South Carolina, in 1919, upon return from overseas, and served as director and assistant to the health officer until he became instructor in public health at Yale in September, 1920.

In 1927, Dr. Hiscock served as administrator of five counties in Arkansas for the State Department of Health and the American Red Cross during and following a Mississippi flood. He has taught public health administration at different times at Columbia University and at the University of California.

Since 1928 Dr. Hiscock has been a commissioner of the New Haven Board of Health, and since 1951 a member of the Connecticut State Public Health Council by appointment by Governor John Lodge. He has served as consultant to the U. S. Public Health Service and as a member of technical committees of the World Health Organization. Reference to "Who's Who in America" and to "American Men of Science" reveals numerous other memberships and official positions, including the Committee on Administrative Practice (ex-chairman), Committee on Research and Standards, Committee on Professional Education, Committee on Eligibility, Chairmanship of the Health Education Section, and several terms on the Editorial Board and on the Governing Council of the American Public Health Association.

He is a past-president of the National Health Council, the International Association of Dairy and Milk Inspectors, the Association of Schools of Public Health, Delta Omega, the National Public Health Society in Military Government, the Connecticut Public Health

Association, the Connecticut Mental Health Association, and the Connecticut Tuberculosis Association, and past vice-president of the National Society for the Prevention of Blindness and the National Social Welfare Assembly. He is an associate member of the American Academy of Pediatrics and of the Connecticut State Medical Society and affiliate member of the American Medical Association.

Dr. Hiscock has received the Army Legion of Merit Award, the Lemuel Shattuck Medal of the Massachusetts Public Health Association, the American Cancer Society Medal, and the Elizabeth S. Prentiss National Award of the Cleveland Health Museum.

Among Dr. Hiscock's books are Community Health Organization, District Health Administration, Public Health in Hawaii, and Ways to Community Health Education (jointly with Mary Connolly, Marjorie Delavan, Raymond Patterson, and William Warthen). Perhaps he is best known as director of numerous health surveys throughout the United States.

In 1921 Professor Hiscock married Margaret McConway Scoville of Northampton, Massachusetts, whom he met first in the Graduate School of Yale University, from which she received an M.S. in bacteriology. They have two children, William McConway of Charleston, West Virginia, and Mrs. Bruce Weatherly of Covington, Kentucky. The Hiscock home is at 215 Highland Street, New Haven, Connecticut.

News of Affiliates

South Dakota—The South Dakota Public Health Association meeting in Huron on September 28–30 was attended by more than 250 persons. Because of the successful experiment in meeting jointly with the State Social Welfare Conference, it was decided to repeat the joint meeting in 1956. The retiring president was Marvin T. Whealy, executive secretary, South Dakota Tuberculosis and Health Association.

The 1955 meeting concentrated heavily on rehabilitation problems with E. B. Whitten, executive director of the National Rehabilitation Association; J. L. Roney, director, federal Bureau of Public Assistance; and Herbert R. Modlin, M.D., Department of Adult Psychiatry, Menninger Foundation, among the speakers.

The association elected the following officers:

President—Harlan Stricklett, administrator, Pennington County Health Department, Rapid City

President-Elect—Floyd Schenk, Yankton

Vice-President—Lee Aase, director, Public Health Statistics, State Department of Health, Pierre

Secretary-Treasurer—T. A. Evans, director, Public Health Education, State Department of Health

Florida—At the Annual Meeting of the Florida Public Health Association in Daytona Beach, on October 22, the following officers were elected:

President—L. L. Parks, M.D., director, Bureau of Preventable Diseases, State Department of Health, Jacksonville

Vice-Presidents—Paul W. Hughes, M.D., director, Brovard County Health Department, Ft. Lauderdale; Viola M. Brewer, St. Petersburg

Secretary—Nathan J. Schneider, director, Bureau of Laboratories, State Department of Health

Treasurer—Frances Neel, Division of Field Nursing, Florida Tuberculosis and Health Association, Jacksonville

Delegate to the APHA Governing Council—Wilson T. Sowder, M.D., state health officer

Washington—At the annual meeting of the Washington State Public Health Association in Spokane in September the following officers were elected:

President—Robert Beaumier, administrative officer, State Health Department

President-Elect—Nora Hall, health educator, Kitsap-Bremerton Health Department

Vice-President—J. E. Van Amburgh, director of sanitation, Seattle-King County Health Department

Secretary—Muriel Thompson, bacteriologist, State Health Department

Treasurer—Seymour Standish, public relations director, Washington Hospital Service Association, Seattle

Representative to the APHA Governing Council—Edna J. Brandt, senior public health nursing consultant, State Department of Health

New Mexico—The New Mexico Public Health Association at its meeting in Santa Fe, October 12–14 elected the following officers:

President—Duane L. Sewell, Silver City
President-Elect—Mary H. Reese, Santa Fe
Vice-President—W. M. Lancaster, M.D., Clovis
Secretary-Treasurer—Robert Howell, senior assistant bacteriologist-serologist, New Mexico Public Health Laboratory, Albuquerque
Librarian—Helen M. Boss, administrative assistant, State Public Health Laboratory, State Department of Public Health
Representative to the APHA Governing Council—James R. Scott, district health officer, 4th Health District, Las Cruces

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There's a Run on the October Journal

The October, 1955, Journal is oversubscribed and therefore understocked. If readers, who had intended to file their copies of this issue, will please return them to the Association Office, 1790 Broadway, New York 19, N. Y., those who are still clamoring for them and your editors will be most grateful.

APHA membership application blank on page XXV

Employment Service

The following pages present information for those seeking public health personnel and for those seeking positions in public health. Other information concerning vacancies and personnel available is on file in the Association Office. Anyone wishing to have the benefit of this additional information can obtain it by writing to the Vocational Counseling and Placement Service of the Association.

Advertising space in these pages is available at special rates for the use of employers or individuals. The charges are $5 for the first 50 words or fraction thereof and $1 for each additional 10 words or fraction thereof. There is no charge to members or Fellows of the Association who desire to utilize the **Positions Wanted** portion of these pages.

POSITIONS AVAILABLE

Washington State. **Health Officer**—Thurston-Mason Health District, Olympia. Attractive opening exists for a full-time qualified health officer for Washington's capital city and surrounding area. Salary range: $9,480–$11,328 per annum. Contact: Dr. Bernard Bucove, State Director of Health, 1412 Smith Tower, Seattle 4, Wash.

Health Educator—wanted to act as executive secretary for long established well organized Tuberculosis and Health Association. An area of 47,000 people is served by this association. Salary commensurate with experience and training. Association car provided. Good personnel policies. Bangor-Brewer Tuberculosis and Health Association. Attention: Personnel Committee, Bangor, Me.

Physicians—with or without public health training and **Pediatricians** needed in maternal and child health program at salaries from $7,276 to $9,142. Five-day week, pension, civil service appointment. Dr. E. R. Krumbiegel, Milwaukee Health Dept., City Hall, Milwaukee 2, Wis.

Nutritionists—$4,572–$4,952 per year. Requirements: dietary internship and master's degree in public health or nutrition. Consultant to public health nurses, schools, clinics, community groups, and dietary interns. Forty-hour, 5-day week. Private car rental allowance. Liberal vacation, sick leave, and retirement policies. Apply: Detroit Civil Service Commission, 612 City-County Bldg., Detroit 26, Mich.

Sanitarian—Salary range, $341–$415; starting salary depends on experience and qualifications. Generalized sanitation program. County located one hour northeast of San Francisco. Retirement plan, medical plan, sick leave. Automobile necessary, mileage paid. Must have California registration or be qualified for same. Apply Health Dept., Box 749, Napa, Calif.

Employment opportunities available for **Sanitary Engineers** with graduation from an approved engineering college and at least three years' experience in sanitary or industrial hygiene engineering under supervision with a public health or sanitary or industrial hygiene engineering organization. A master of science degree in engineering with a major in sanitary, public health, or chemical engineering from an approved institution may be substituted for one year's experience. At time of initial employment with this agency applicant must not be over 45 years of age. Starting salary $5,400. Excellent opportunity for security and advancement; generous retirement plan. Write Personnel Supervisor, Florida State Board of Health, P.O. Box 210, Jacksonville, Fla.

Deputy Director of Health—to assist the director in the supervision and conduct of a municipal health program. Physician must have some graduate training in public health and experience in public health work, including the practice of medicine and surgery. Must be eligible to practice medicine in Connecticut. Salary range $8,632–$10,296 per year. Complete details by writing to Personnel Director, Municipal Bldg., Hartford, Conn.

Public Health Nurses—for generalized program, including school services. Liberal personnel policies, 37½-hour week, county car, or 8 cents per mile. Salary range $351–$370–$391–$413. Apply: Butte County Health Dept., P.O. Box 1100, Chico, Calif.

Public Health Nurses—Entrance salary up to $4,004.

Sanitarian—B.S., plus one year's experience $4,264, B.S., no experience $4,004.

Chief, Division of Tuberculosis Control—Entrance salary up to $8,715, Montgomery County, Md., government, adjacent to Washington, D. C. Merit system employment. For additional information and applications write Personnel Office, County Office Bldg., Rockville, Md.

Bacteriologist—New York State County Laboratory. Modern, well equipped and staffed laboratory. Master's degree or

bachelor's degree with equivalent experience. Civil service, but temporary appointment can be arranged. Salary—$4,200 going to $4,700 by five annual $100 increments. Joesph Lebowich, M.D., Saratoga County Laboratory, 215 Church St., Saratoga Springs, N. Y.

Sanitarian Trainee Position — Twelve months' supervised field training available in rural health district. Generalized program. University of Michigan and Michigan Department of Health approved training center. $300 per month stipend. Car furnished (can also be used for private use). Now open to graduate or undergraduate. Donald M. Harris, M.D., Director Branch-Hillsdale District Health Dept.; main office, Coldwater, Mich.

Health Educator—for long established well organized health department. Master's degree from approved school of public health, with specialization in health education required. Salary $4,200–$4,800. Good personnel policies. Agency car provided. Cattaraugus County Dept. of Health, P. O. Box 573, Olean, N. Y.

Physicians Wanted—Openings for public health physicians in Kentucky. Salaries up to $11,000 per annum. Contact Bruce Underwood, M.D., State Health Commissioner, 620 S. Third St., Louisville 2, Ky.

Psychiatric Social Workers—Expansion of social services in Minnesota's State Mental Health Program offers the following openings to qualified personnel: Psychiatric Social Worker I, several ($350–$400), caseworkers in hospitals or clinics. Two years' graduate social work training required. Psychiatric Social Worker II, several ($370–$420), senior caseworker and/or case supervisor in hospital or clinic. Same qualifications as preceding, plus casework experience, preferably in psychiatric setting. Herbert Gardner, Personnel Director, Dept. of Public Welfare, 117 University Annex, St. Paul, Minn.

Wanted: **Public Health Laboratory Bacteriologist**—Five-day week; start $330 monthly; county retirement system; California certificate necessary. Write: Dr. Heindl, 810 Scenic Drive, Modesto, Calif.

Public Health Nursing—positions available in health department with the city of Flint, a rapidly growing city of 180,000 population. Beginning, intermediate, and administrative positions are available. Five-day, 40-hour week, with liberal retirement, vacation, and sick leave policies. Beginning salary rates, depending on experience and qualifications, $3,498, $3,783, $4,147 with automatic increases. Apply Flint Civil Service Commission, City Hall, Flint, Mich.

Bacteriologists—State certificate required, $311 to start, increases to $378. Apply County Civil Service, 236 Third St., San Bernardino, Calif.

County Health Officer—Position available as director of county department of health, northern Indiana. County population 35,000. Department has full-time nurse, sanitarian, and clerk. Salary $12,500 annually. M.P.H. degree preferred, but not required. Contact Dan L. Urschel, M.D., Mentone, Ind.

Wanted: **Health Officer**—for district composed of three rural counties in Suwannee River Valley. Population 38,000, budget $58,000, personnel 16. Headquarters in Madison, lovely modern town of 3,500. Must be medical doctor with master's degree in public health, some experience desirable, between the ages of 28–45. Beginning salary $9,000 $9,600. Reimbursed for travel. First class merit and retirement systems. Vacation and sick leave. Position will be open about first of January. Wilson T. Sowder, M.D., M.P.H., State Health Officer, P. O. Box 210, Jacksonville, Fla.

Psychiatric Social Workers—Division of Mental Health Service, St. Louis County Health Department, Clayton, Mo. Four positions available in dynamically oriented child guidance clinic and community mental health service program, providing challenging experience in expanding community preventive mental health service. Two years' graduate work leading to master's degree in social casework in psychiatric sequence. Salary range: $3,684 to $4,944 depending upon experience. Annual increments under civil service. Address inquiries to Earl R. Chambers, Personnel Director, St. Louis County Civil Service Commission, 115 North Meramec Ave., Clayton 5, Mo.

Consultant Public Health Nurse—Salary from $5,090 to $6,320 in five annual salary increases. One vacancy in the Health Department at Albany. Requirements: New York State registered professional nurse license or eligibility for license; bachelor's degree and approval of qualifications for supervision by the New York State Public Health Council; five years of satisfactory public health nursing experience, including two years as a supervisor or consultant. For further information and application blanks contact the New York State Dept. of Civil Service, Governor Alfred E. Smith State Office Building, Albany; or 39 Columbia St., Albany; or Room 2301, 270 Broadway, New York City; or Room 212, State Office Building, Buffalo. New York State residence not required.

Occupational Therapists — Immediate openings in California's public and special state schools, hospitals, correctional institutions, and veterans' home. Requires eligibility

for registration with National Registry of Qualified Occupational Therapists. Salary ranges $325–$458. Liberal vacation and retirement. Write at once to State Personnel Board, 801 Capitol Ave., Sacramento 14, Calif.

Supervisor of Public Health Nurses—Salary $4,980–$5,340. Must have two years' postgraduate work in public health and five years' experience in public health nursing, two years of which have been in a supervisory capacity. City of Saginaw, Mich., located in the central part of eastern Michigan (population 100,000). Benefits include 10 days' sick leave, two weeks' annual leave paid per year, nine paid holidays, retirement benefits, and monthly car allowance. Apply Personnel Dept., City Hall, Saginaw, Mich.

Deputy Director of Health—to assist the director in the supervision and conduct of a municipal health program. Physician must have some graduate training in public health and experience in public health work, including the practice of medicine and surgery. Must be eligible to practice medicine in Connecticut. Salary range $8,632–$10,296 per year. Complete details by writing to Personnel Director, Municipal Building, Hartford, Conn.

Psychiatric Social Worker—wanted by the Mental Health Division of the Volusia County Health Unit, Daytona Beach, Fla. Must be a graduate of an approved school of social work and a PSW major and preferably with some experience in a child guidance clinic. Salary will be based on qualification, training, and experience as determined by the Florida Merit System. R. D. Higgins, M.D., Director, Volusia County Health Unit, Daytona Beach, Fla.

Health Commissioner—City of Wauwatosa Health Department; staff of 16 persons; population 45,000; possession of a Wisconsin medical license and preferably an M.P.H. degree with some public health experience (substitutions permitted); salary open depending on qualifications. Write Personnel Director, City Hall, 7616 Harwood Ave., Wauwatosa 13, Wis.

Public Health Engineer—Qualifications: degree from accredited school of engineering, civil or sanitary, and two years of experience in public health work. Salary $5,800–$6,800. Inquire of Ian D. McLaren, M.D., Commissioner, Cattaraugus County Dept. of Health, P. O. Box 573, Olean, N. Y.

Assistant Director of Public Health—for San Bernardino County in Southern California. Responsible for professional medical services of the public health program and performs administrative work in connection therewith. Population 361,000. Salary range $713–$866. Requirements: M.D., M.P.H., and two years' experience in a recognized department of public health. Must be eligible for California license. Write Department of Civil Service and Personnel, 236 Third Street, San Bernardino, Calif.

Medical Social Worker-Consultant—Here is an opportunity to provide professional consultive services in the development and administration of a medical social work program in a county public health department. Salary $360–$438. San Bernardino County is in Southern California. Population 361,000. Requirements: two-year postgraduate course in accredited school of social work, with specialization in medical social work followed by one-year experience in a hospital, clinic, or health department; or a two-year postgraduate course in social work followed by two years' paid medical social work experience. Write Department of Civil Service and Personnel, 236 Third Street, San Bernardino, Calif.

Public Health Physician—as health officer for bi-township health district including university cities of Champaign and Urbana. Salary range $10,000–$12,000. Retirement plan. Starting salary dependent on training, experience and successful performance record.

Public Health Medical Residencies—in Cook and Will Counties; residency stipend $5,000–$6,000. Securing of M.P.H. degree can be arranged. Commitment to several years employment in Illinois expected. Write Roland R. Cross, M.D., Director, State Department of Public Health, State Office Building, Springfield, Ill.

Executive Director—Midwest Visiting Nurse Association. Large industrial city. Open now. Good personnel policies. Salary range $6,000–$7,000. Write **Box C-28,** Employment Service, APHA.

POSITIONS WANTED

Public Health Psychiatrist—Age 34, veteran, M.D., and M.P.H., degrees, Board-eligible in psychiatry, with training and experience in psychotherapy, hospital and outpatient psychiatry, community psychiatry, administration, teaching, and research. Desires appointment on faculty of medical school or school of public health, or position as administrator of mental health program. **Box PH-57,** Employment Service, APHA.

Preventive Medicine Teacher—M.D., American Board of Internal Medicine; six years' experience full-time teaching and re-

search in this field in medical schools. Age 38. Seeks appointment in school in mountain states. **Box Ph[illegible]** ployment Service, APHA.

Health Educator—M.S.P.H.Ed. Columbia University School of Public Health 1953. Army veteran with two years of experience as preventive medicine technician. Willing to resettle. **Box HE-71,** Employment Service, APHA.

Clinical Chemist—B.S. in chemistry. Experience in diagnostic chemistry. Seven years' experience in biochemical research. Desires position of responsibility in clinical laboratory. Samuel F. Mel[illegible] Jr., 719 Ayers Street, Corpus Christi, Tex.

Public Health Educator—MSPH. Five years' teaching in health education demonstration project among special population group of state voluntary health agency; directed education workshops and community organizing for x-ray, general health education, and parent education, and child growth programs. Desires employment in East or Midwest. **Box HE-72,** Employment Service, APHA.

Commercial Advertisements

All communications on the following commercial advertisements should be sent to Burneice Larson, Medical Bureau, Palmolive Building, Chicago 11, Ill.

OPPORTUNITIES AVAILABLE

(a) Health commissioner; two-county health department; California. (b) Director, university health department; 3,000 students; opportunity affiliation state health department; West. (c) Health commissioner; county health department; resort city, Michigan. (d) Executive director, visiting nurse association; staff of 25; large city, medical center, West; $6,000–$7,500. (e) Associate professor, PH nursing; state university; $5,000–$6,000; South. (f) PH nursing supervisors and staff; rural urban area; outside U. S. (g) Health educator; Pacific Northwest. (h) Health educator; university faculty position; $500 a month, 10-month period; East. (i) Public health engineer, educator, bacteriologist; parasitologist, epidemiologist; faculty posts; university operated under American auspices; foreign. (j) Health inspector, experienced meat and dairy products inspection; foreign; $700. (k) Two PH nursing supervisors; countywide health department; college town, California; cars provided.

OPPORTUNITIES WANTED

(a) Public health physician; M.P.H.; Diplomate; nine years, director, city health department. (b) Public health nursing administrator; B.S., Ed., M.P.H.; seven years' experience as public health nursing administrator and teacher. (c) Health educator; B.S. (health education), M.A. (public health); six years, health educator, state health department. (d) Entomologist, Ph.D.; experience includes serving as entomological field man in industry, sanitarian for large university, public health officer in military government (foreign), teaching sanitary science and public health at one of leading universities.

News from the Field

WHO News

Dr. Soper Observes Round the World

Fred L. Soper, M.D., director of the Pan American Sanitary Bureau, is on a trip around the world visiting three of the six WHO regions where he is observing health conditions and programs that may have some bearing on the work conducted under his guidance in the Americas. He is interested principally in observing what is being done in the other regions of the world in the global program of malaria eradication. A further interest is conditions in Asia and areas of the Pacific which history has so far spared from any invasion of yellow fever. After stopping in Geneva to attend the meeting of the WHO Executive Board, he will return to Washington by the end of January.

PASB News and Notes

The Pan American Sanitary Bureau, WHO Regional Office for the Americas, with the September, 1955, issue established a monthly newsletter called "News and Notes." Here are capsuled some of the ongoing activities of WHO in the Americas.

The October issue reports on a survey of nursing resources in the Americas, taking note of the 1956 and Ninth World Health Assembly theme, "The Nurse—Her Education and Role in Health Services." PASB is assisting nursing organizations in conducting a survey of nursing resources in each country. The Brazilian Nurses' Association is making a detailed study, with the aid of a $10,000 grant from the Rockefeller Foundation, which is also providing a three-month fellowship to a Brazilian nurse for a study of survey technics in the United States.

Earl Warren Hall Dedicated

Earl Warren Hall was dedicated at the University of California on September 17. It "symbolizes the dedication of the men and women who have dreamed and labored to make the School of Public Health and the Cancer Research Genetics Laboratories realities," each of which now have a home in the Earl Warren Hall.

The School of Public Health traces its ancestry to 1873 when the first secretary of the State Board of Health, Thomas Muldrup Logan, M.D., accepted the Chair of Hygiene in the university. In 1942 the California Public Health Association established a Committee on the Establishment of a School of Public Health chaired by William P. Shepard, M.D. In 1943 the legislature enacted a law, which Governor Warren signed, establishing the school. Walter H. Brown, M.D., was the last professor of hygiene and the first dean of the school.

The Cancer Research Laboratory was established in 1948 to:

1. Carry on research on the relation between genetics and cancer.
2. Encourage cooperative cancer research projects.
3. Train graduate students in disciplines pertinent to cancer research.
4. Provide experimental animals to cancer research workers throughout the university at cost.

Ringelmann Smoke Chart Available

A new edition of the "Ringelmann Smoke Chart" is now available from the U. S. Bureau of Mines. This chart, first introduced into this country in 1897, is a standard guide often used in developing and enforcing smoke control regulations. Many smoke control regulations list violations in terms of the

duration of smoke emission and the density as compared with the Ringelmann scale. The new publication describes use of the scale and contains a chart for making observations of four densities of smoke.

Single copies are available free. IC 7718 "Ringelmann Smoke Chart," Bureau of Mines, Publications-Distribution Section, 4800 Forbes St., Pittsburgh 13, Pa.

32 Million for Rehabilitation

The Office of Vocational Rehabilitation, U. S. Department of Health, Education, and Welfare, has announced that $32,600,000 in grant funds has been made available to the 48 states and the territories on a matching basis; $30,000,000 for basic support of the nation-wide vocational rehabilitation program and $2,600,000 for expansion and improvement of rehabilitation services and facilities during fiscal 1956. During fiscal 1955 approximately $26,800,000 was made available for the same purposes.

Nine grants totaling approximately $160,000 have been approved in support of special rehabilitation research and demonstration projects, on the recommendation of the National Advisory Council on Vocational Rehabilitation. Grant recipients must provide at least $1 for each $2 of federal grants. Of particular interest to public health is the grant of $6,500 to the Idaho State Department of Health for a study of the extent of physical disability of vocational rehabilitation significance among seasonal workers migrating annually from the Southwestern United States to the Snake River Valley.

The other eight projects for which 1955 research grants were awarded cover such diverse subjects as: effectiveness of music therapy in rehabilitation of the blind; intellectual and personality factors associated with success in lip reading; and industrial assimilation of epileptics in a community workshop. Grantees include two educational institutions, a county hospital, a state division for rehabilitation of the blind, a community workshop, an independent clinic, and two voluntary rehabilitation agencies.

Pediatric Neurology Fellowship

A fellowship in pediatric neurology providing clinical training in the diagnosis and rehabilitation of children with neuromuscular handicaps is available at the Children's Neurology Clinic of the Cook County Hospital, Chicago. In addition, the trainee will be expected to participate in a clinical laboratory problem. The annual stipend varies from $3,000–$5,000, depending upon the qualifications of the applicant.

Further information from M. A. Perlstein, M.D., 4743 N. Drake Avenue, Chicago 25, Ill.

Courses for the Atomic Age

The University of Chicago is giving two-year courses leading to a master's degree in two new specialized fields created by the atomic age—health physics and radiological physics. These courses are said to be the first offered by a nongovernmental agency.

The health physicist will learn how to determine standards of allowable exposure to radiation and to direct protective measures. Such a specialist is often required by insurance companies, state governments, and others that have a relationship to radiation hazards.

The radiological physicist calculates dosages from radiation sources used in cancer treatment and measures for research projects the intensity and type of emissions from radioactive isotopes.

Both courses are being given at the Department of Radiology of the university's Medical Center under the direc-

tion of Lester S. Skaggs, associate professor of medical physics.

NAS Safay Memorial Scholarship

The National Association of Sanitarians has established the General Fred A. Safay Memorial Scholarship for advanced study of environmental sanitation as a memorial to a former association president, General Fred A. Safay, for 30 years sanitarian with the Florida State Board of Health. The fund for the $1,500 award for a year's study and for administration was contributed by 12 industry sponsors.

Nicholas Pohlit, sanitarian of the Adams-Arapahoe-Jefferson Counties health district, the first winner, was presented the new award at the 19th Annual Educational Conference of the sanitarians association in Boston in August.

California Air Sanitation Bureau

A Bureau of Air Sanitation has been established in the Division of Environmental Sanitation, California State Department of Health, with John A. Mega, senior sanitary engineer in the Bureau of Sanitary Engineering as acting chief. Supporting the bureau's activities is a new laboratory unit supervised by Floyd W. Hartman, Sc.D., assistant chief of the Division of Laboratories. In addition, the Bureau of Chronic Diseases, headed by Lester Breslow, M.D., is carrying on investigations to determine the medical aspects of air pollution.

The bureau grew out of a study made by the department. Among the recommendations made to the governor, who requested the study, was that a state agency be designated to exercise the state's responsibilities in the air pollution field.

Immediately after the bureau was established a meeting was held of federal, state, and local health and air pollution authorities and University of California officials to discuss recent state and federal legislation and to determine program activities of the various agencies in research, training, surveillance, control, coordination, and public interpretation. Here it was agreed that the State Department of Health should serve as coordinator of activities and that representatives of nongovernmental agencies be included in further planning.

The initial task of the new bureau, as outlined by the state health officer, Malcolm H. Merrill, M.D., is to "develop a basis for a public health program in the field of air pollution, preferably one of prevention, not of regulation."

Illinois Department Shares Award

The Illinois Department of Public Health, together with the Michael Reese Research Foundation, received a Medical Progress Award from the Illinois State Medical Society at its 1955 annual meeting. The award, the first of its kind made by the society, was granted for investigations of an ultraviolet irradiated poliomyelitis vaccine made by a team of research workers from the health department and the Reese Foundation.

The team was headed by the late Sidney O. Levinson, M.D., executive director of the Michael Reese Foundation, and Howard J. Shaughnessy, Ph.D., director of the department's Division of Laboratories. The field studies were directed by Ruth O. Church, M.D., chief of the department's Bureau of Communicable Disease Control. The joint investigations, under way for several years, are being continued under a grant to the Reese Foundation from the Public Health Service.

Social Security Nearly of Age

The August issue of the Social Security Bulletin is devoted to "The Social Security Act: The First Twenty Years."

This anniversary issue reviews where we are in social security, where we came from, and some of the directions in which we might be going in the future. The new Secretary of Health, Education, and Welfare, Marion B. Folsom, defines social security in the United States as "a series of working partnerships between the federal government, the states, and the localities, and between these arms of government and the nation's workers, employers, professions, and voluntary social organizations."

Social Security Bulletin, Vol. 18, No. 8 (Aug.), 1955, Gov. Ptg. Office, Washington 25, D. C.; 20 cents.

Dental Division in Idaho

The former Dental Health Section of the Division of Maternal and Child Health in the Idaho State Department of Health has been raised to division status. Wesley O. Young, D.M.D., former head of the section, continues as the new division director.

One Department for Wayne County?

The Citizens Research Council of Michigan * has recently completed a study of health organization in Wayne County. Made at the request of the Wayne County Board of Supervisors and a County Organization Committee, the purpose of the study was to explore how the governmental agencies of the county could best be organized to furnish health services to the public, whether the present distribution of health functions is the most desirable, and what new legal powers and authority are needed to carry out the necessary public health functions properly. James A. Crabtree, M.D., head of the Department of Public Health Practice, Pittsburgh Graduate School of Public Health, served as consultant to the study. In addition, a group of leaders in Wayne County concerned with the health of the citizens served as an advisory committee.

The study makes 13 recommendations, the first of which is that a county department of health and hospitals be established to include all public health activities and the four existing municipal and county hospitals. This would replace the present situation under which Detroit has a health and hospital department with full-time medical leadership, a full-time county health department serving a part of the county only, six cities with part-time health officers but full-time nursing personnel, 22 municipalities with part-time health officers only, and 14 school districts providing nursing service.

Other recommendations include transferring responsibility for school health services to the county health department, transferring inspection of dairy farms to the State Agricultural Department, but leaving with the county health department inspection of milk receiving stations and processing plants, creating industrial hygiene and air pollution bureaus in the department, and planning for joint buildings for health center and hospital use.

Health Organization in Wayne County, Citizens Research Council of Michigan, 810 Farwell Building, Detroit 26. No information as to distribution.

USPHS Nursing Research Grants

The latest session of Congress appropriated $625,000 for research grants and fellowships in nursing to be administered by the Public Health Service. Heretofore nursing research grants were made from nonearmarked funds available for general medical research. Grants will be made to health agencies,

* Formerly Bureau of Governmental Research.

hospitals, institutions, and other agencies under whose auspices the research will be carried on. Fellowships will be available only to nurses for the purpose of postgraduate training in research methods. Applications for each should be made to: Division of Research Grants, National Institutes of Health, Bethesda 14, Md.

What to Do About Drug Addiction

At the request of an Interdepartmental Committee, made up of representatives of the Department of Health, Education, and Welfare, and of the Departments of State, Treasury, Defense, and Justice, the Committee on Public Health of the New York Academy of Medicine has prepared a "Report on Drug Addiction." The request was made after the Payne Resolution "to provide a more effective control of narcotic drugs, and for other purposes" was introduced with the co-sponsorship of 43 senators, representing the different areas and political parties of the country.

The program suggested by the academy committee would first of all work toward a change in attitude toward the addict—that he is "a sick person, not a criminal." The chief criticism made of the Payne Bill, which died in committee before the academy report, was its continued emphasis on punitive rather than curative and preventive measures.

Further recommendations of the academy committee are "to take the profit out of illicit drug traffic" by letting the addict obtain his drugs at low cost under federal control, in conjunction with efforts to have him undergo withdrawal treatments. Medical supervision and rehabilitation of existing addicts, continuing efforts to eliminate the supply of illegal narcotics, an educational program for both adults and adolescents, and a study of the epidemiology of drug addiction are other recommendations.

This report was published in the August, 1955, issue of the Bulletin of the New York Academy of Medicine. Reprints are available without charge. 2 East 103rd St., New York 29, N. Y.

A Single General Health Grant?

The United States Municipal News, semimonthly organ of the United States Conference of Mayors, summarizes the recommendations on specific grant-in-aid programs made by the Advisory Committee on Local Government of the Commission on Intergovernmental Relations. The two shortest have to do with health grants and hospital construction. They read, respectively, "Public health grants should be combined into a single general health grant" and "The Hill Burton program should continue."

As to vocational education and rehabilitation they are recommended for return to the states for financing and administration except where they apply to veterans. It is recommended that local welfare boards have greater discretion as to eligibility and standards for assistance and further that categorical aids and general assistance should be replaced by a general welfare grant.

United States Municipal News, 22:19, October 1, 1955, 730 Jackson Place, Washington 6, D. C.

1955 Nobel Winners in Chemistry and Physics

Three United States scientists have won the 1955 Nobel prizes in chemistry and physics, according to an announcement made in Stockholm on November 2. Vincent du Vigneaud, Ph.D., chemistry professor at Cornell University Medical College, New York City, received the award in chemistry in recognition of his work on the analysis and

synthesis of hormones, particularly those of the pituitary gland.

The American Public Health Association presented a Lasker Award to Dr. du Vigneaud in 1948 "for advancing the frontiers of our knowledge of fundamental living processes." He thereby becomes the ninth person to receive an APHA Lasker Award who has also received a Nobel Award. The others are Carl Ferdinand Cori, Karl Landsteiner, Selman A. Waksman, Max Theiler, Edward C. Kendall, Philip Hench, Hans A. Krebs, and John F. Enders.

The Nobel Physics Award for 1955 was made jointly to Professor Willis E. Lamb of Stanford University and Professor Polykarp Kusch of Columbia University, New York. The chemistry prize and the physics prize are each valued at $36,720.

Modernizing the Sanitary Code

The New York City Health Department has embarked on a three-year program of modernizing the city's Sanitary Code. This code has not been revised for more than 40 years. The policies and regulations put into the New York City Sanitary Code have been followed in many communities throughout the nation. The code has often served as a model for basic public health law elsewhere.

Because of the wide influence of the code throughout the nation, the Rockefeller Brothers Fund and the W. K. Kellogg Foundation are supporting the revision. The actual work is being carried on under contract by the Legislative Drafting Research Fund of Columbia University, whose associate director, Frank P. Grad, is in charge.

50 Laboratories for Glass Research

The Owens-Illinois Glass Company dedicated its new Technical Center in Toledo on September 27. The center, with 200,000 square feet of floor space, has 50 laboratories, is staffed by 500 scientists and technicians who are conducting research in every phase of glassmaking. The history of glassmaking was reviewed by the board chairman, J. P. Levis, at the dedication ceremonies.

The Kimble Glass Company, a subsidiary of Owens-Illinois, manufactures a wide variety of scientific and laboratory glassware. This company also sponsors the Kimble Methodology Research Award of the Conference of State and Territorial Laboratory Directors, presented annually since 1953 at Annual Meetings of the American Public Health Association.

Industrial Medicine Fellowships

The University of Cincinnati's Institute of Industrial Health is offering graduate fellowships in industrial medicine to provide professional training for graduates of approved medical schools who have completed a year's internship.

The three-year course leading to the degree of doctor of science in industrial medicine, satisfies the requirements for certification in occupational medicine by the American Board of Preventive Medicine. Two years are devoted to intensive academic and clinical study in the field of industrial medicine. A final year is spent in residency in an industrial medical department or in some comparable organization.

Stipends for the first two years vary from $3,000 to $4,000 depending on marital status. In the final or residency year a fellow is compensated by the organization in which he is completing his training.

A one-year certificate course, without stipend, is also offered to qualified applicants.

Additional information from Secretary, Institute of Industrial Health,

College of Medicine, Eden and Bethesda, Cincinnati 19, Ohio.

Hospitals Magazine Doubles Itself

"Hospitals," the monthly journal of the American Hospital Association, goes into bi-monthly publication with the January, 1956, issue in order to meet the "demands from the field for more information at a more frequent rate." Publication dates will be the first and 16th of the month.

The cover is being changed to feature pictures. The editorial staff is being expanded to prepare more information and new departments for the magazine. Advertising rates are being increased and subscription rates will rise from $2 to $5, except for members whose journal subscription is included in membership dues which are not being increased.

Blakeslee CV Reporting Awards

At the annual dinner of the American Heart Association in New Orleans, October 23, four winners received 1955 Howard W. Blakeslee Awards for outstanding reporting in the field of heart and blood vessel disease. The awards carry an honorarium of $500. The winners are:

Frances Burns, medical editor of the Boston Daily Globe, for a series of 13 articles on heart research and advances in the treatment and prevention of cardiovascular diseases.

Jane Stafford for year-round coverage of important developments in the cardiovascular field syndicated by Science Service.

William Peters for "A New Heart for Pamela" in the September, 1954, issue of Cosmopolitan magazine, describing a new technic in heart surgery in which the circulatory systems of a child and her father were linked so that surgeons could repair a defect in her heart.

The Columbia Broadcasting System, for the film "Gate 27," telecast over the CBS-TV network. The film describes research being conducted at the Laboratory of Physiological Hygiene, University of Minnesota, on the possible relationship of diet, vocation, and other factors to cardiovascular vessel diseases.

Vaccination Certificates Reminder

The Division of Foreign Quarantine of the Public Health Service reminds health officers and physicians of the completed International Certificate of Vaccination (for smallpox) that persons traveling outside the United States must have. This form is given with each passport application, must be completed by the vaccinating physician, and authenticated by the local health officer, using his official stamp or seal. The Service points out that persons who carry a valid vaccination certificate with full information and proper authentication can be quickly processed at quarantine stations both here and abroad.

The certificate is given with passport application; travel agencies and automobile clubs usually have it; or it may be purchased from the Gov. Ptg. Office, Washington, D.C.; 5 cents.

Many Lands and Many Interests

Almost one-third of the 134 members of the 1955 class of the Harvard School of Public Health are foreign students representing 25 different countries. There are 91 students from 28 states in this country. The members of the class are majoring in 18 different fields of interest. More than half of the class, 71, are physicians; among other professions represented are nurses, 12; engineers 9; veterinarians, 5.

PERSONALS

J. Burns Amberson, M.D., professor emeritus of medicine, College of Physicians and Surgeons, Columbia University; a member of the editorial board, "Excerpta Medica"; and consultant to a number of hospitals; has been appointed director, New York Tuberculosis and Health Association. He

succeeds HERBERT H. EDWARDS, M.D.,† who has been appointed associate professor of public health and medicine, Yale University School of Medicine, New Haven, Conn.

C. H. ATKINS,† sanitary engineer director, Public Health Service, adviser in public health engineering to the Government of India for the past 32 months, is now regional engineer at the Washington Regional Office of the Service succeeding EDMUND C. GARTHE, M.P.H.,* now regional engineer, Denver Regional Office. Mr. Garthe, succeeds CHARLES T. WRIGHT,† sanitary engineer director, who is now chief, Technical Services Section, Division of Sanitary Engineering Services, PHS in Washington, D. C.

ROMEO ATIENZA, M.D.,† is now president of the Philippine Public Health Association, Manila.

HERMAN GLENN BAITY, Sc.D.,* professor and and head, Department of Sanitary Engineering, University of North Carolina School of Public Health, Chapel Hill, on leave as director, Division of Environmental Sanitation, World Health Organization, Geneva, has retired. He has been succeeded by DANIEL A. OKUN, Sc.D.,† former associate professor in the department.

ROBERT N. BARR, M.D., M.P.H.,* has been appointed secretary and executive officer, Minnesota State Department of Health, Minneapolis, succeeding ALBERT J. CHESLEY, M.D.,* deceased.

ALONZO F. BRAND, M.D.,† has been appointed medical officer in charge of the Indian Health Area Office, Public Health Service, Oklahoma City, to administer the Service's program for Indian health in Oklahoma, Kansas, Florida, Mississippi, and North Carolina.

BERNARD M. BLUM, M.D., M.P.H.,* was elected chairman, Health Division, Health and Welfare Council of Philadephia, Pa., at its recent annual meeting.

WILLIAM L. BREWER,* former senior sanitarian, Brazoria County Health Department, is now engineer, District No. 2, Texas State Department of Health, Fort Worth.

CLIFFORD LEE BROWNELL, Ph.D.,* chairman, Health and Physical Education Department, Teachers College, Columbia University, New York City, is now a member of the National Commission on Safety Education, National Education Association.

JOHN C. BUGHER, M.D.,† who has retired as director, U.S. Atomic Energy Commission, Division of Biology and Medicine, received from the commission its distinguished service and its superior accomplishment awards for outstanding service. The awards include $2,000. Dr. Bugher is returning to the Rockefeller Foundation, New York City, as director, Division of Medical Education and Public Health.

PAUL J. CHRISTENSON, M.D., M.P.H.,† formerly deputy commissioner of health, Rensselaer County Health Department, is now commissioner of health, Utica, N. Y.

DEAN F. DAVIES, M.D., former assistant professor of biochemistry, Washington University School of Medicine, St. Louis, has been appointed research associate, American Cancer Society, New York City.

R. D. DEFRIES, M.D., D.P.H.,* retired on October 1 as director, Connaught Medical Research Laboratories, and the School of Hygiene, and as head, Department of Public Health Administration, School of Hygiene, University of Toronto, Ont., Canada. He is continuing as consultant to the laboratories.

MANLY B. DONALDSON, M.D., D.P.H.,† formerly assistant director, Professional Service Department, Lederle Laboratories, is now medical adviser, Advertising Department, Schering Corporation, Bloomfield, N. J.

THOMAS D. DUBLIN, M.D.,* formerly medical consultant, vaccine field trials, National Foundation for Infantile Paralysis, is now on the staff of the National Institutes of Health, Bethesda, Md., assigned to the Community Services Program.

MILTON EISLER, Ph.D., has been appointed endocrinologist, Biochemical Research Department, Schering Corporation, N. J.

C. HOWE ELLER, M.D., Dr.P.H.,* professor, Department of Community Health, University of Louisville School of Medicine, Louisville, Ky., is serving part-time also as special consultant for public health and medical care, Community Research Associates, New York City.

ANDREW C. ERLANSON, M.D., who recently completed a three-year fellowship in pediatrics at the Mayo Clinic, Rochester, has been appointed pediatrics consultant, Minnesota Department of Health.

ROBERT E. FARBER, M.D., has been appointed district health officer, Southern Health District, Baltimore (Md.) City Health Department, a position unfilled since October, 1954. He is on an eight-month leave to study for a master of public health degree at the Johns Hopkins School of Hygiene and Public Health.

LIEUTENANT COLONEL OSCAR FELSENFELD, M.C., U.S.A.,* now associated with the

* Fellow.
† Member.

406th Medical General Laboratory, APO 500 San Francisco, Calif., received a Diploma of Honorary Membership from the Kitasato Institute in Tokyo, Japan, "In recognition of contributions to experimental pathology in Japan." He also received the Bronze Star Medal from the U. S. Army.

ROY FOSTER, H.S.D.,† former school health consultant, New York State Tuberculosis and Health Committee, is now professor of health education, Oregon State College, Corvallis.

JOHN C. GEYER, Dr.Eng.,* is on leave of absence from Johns Hopkins University as PASB-WHO consultant to the Department of Sanitary Engineering at the School of Public Health in Chile, under the special program of technical assistance to Latin American schools of public health.

F. F. HILL, M.D., former governor of the Farm Credit Administration, and provost, Cornell University, is now a vice-president of the Ford Foundation, New York City, with particular responsibility for the foundation's efforts to assist countries in Asia and the Near East to raise their standards of living and learning.

ASSISTANT SURGEON GENERAL MARK D. HOLLIS,* chief engineer, Public Health Service, and HERSHEL ENGLER, chief sanitary officer, Division of International Health, are on a two-month mission to Southeast Asia and the Middle East inspecting and discussing sanitary engineering and environmental sanitation programs with the mission chiefs and chief sanitary engineers of the U. S. Operations Missions.

CHARLES BRENTON HUGGINS, M.D., Sc.D., director of the Ben May Laboratory for Cancer Research and professor of urology, University of Chicago School of Medicine, Chicago, Ill., was presented with the 1955 Borden Award in the Medical Sciences at the 66th Annual Meeting of the Association of American Medical Colleges in October.

ANNIE LAURIE KEYES, Ph.D.,* has returned to Manila, Philippines, where she is health educator adviser, Health and Sanitation Division, U. S. Operations Mission to the Philippines.

CHARLES GLEN KING, Ph.D.,* treasurer, APHA, and scientific director of the Nutrition Foundation, Inc., New York City, has been named to the National Advisory Arthritis and Metabolic Disease Council.

HOWARD W. LUNDY, Dr.P.H.,* former health education consultant, the Institute of Inter-American Affairs, assigned to Mexico, is now scientific director, Muscular Dystrophy Associations of America, New York City.

C. B. MATHER, M.D., M.P.H.,* former director of health and registrar of vital statistics, Waterbury, Conn., is now health officer of the Fayette, Pike, and Ross Counties Health Department, with headquarters in Chillicothe, Ohio.

LEONARD W. MAYO, S.Sc.D.,† executive director, Association for the Aid of Crippled Children, New York City, and chairman, Commission on Chronic Illness, has been awarded a citation for his services "for the welfare of people" by the National Council of the Churches of Christ in the U.S.A.

ELMER V. MCCOLLUM, Ph.D.,* professor emeritus of biochemistry at the Johns Hopkins University School of Medicine, Baltimore, Md., was presented the 1955 Osborne and Mendel Award of the American Institute of Nutrition, consisting of $1,000 and a scroll.

EUGENE L. MORRILL, JR., former executive director, Baltimore Hearing Society, has been appointed program director, American Hearing Society, Washington, D.C.

JOHN MORRIS and JOHN B. MCNALLY, principal public health engineers, New Jersey Health Department, have been transferred from the New Jersey State Health Department's Division of Environmental Sanitation to the Division of Local Health Services and assigned, respectively, to the Northern State Health District, Dover, and the Southern State Health District, Haddonfield. ROBERT W. ALEXANDER, THOMAS P. CONLON, TERENCE P. CURRAN, and ROBERT PRESSLEY are new public health engineers in the Division of Environmental Sanitation, Trenton.

HENRY R. O'BRIEN, M.D., M.P.H.,* Office of International Health Relations, Public Health Service, has retired and has been appointed director of professional training, Pennsylvania State Department of Health, Harrisburg.

HAROLD W. OPPICE, D.D.S., past president, American Dental Association, Chicago, Ill., has been appointed a member of the Health Resources Advisory Board (Rusk Committee) succeeding LEO J. SCHOENY, D.D.S.,† of New Orleans.

FRANK REYNOLDS, M.D., M.P.H.,* former medical director, Saratoga Spa Authority, has been appointed director, Bureau of Chronic Disease and Geriatrics, New York State Health Department, Albany, N. Y.

THORNDIKE SAVILLE, D.Eng.,* dean, New York University College of Engineering, New York City, has been elected president

* Fellow.
† Member.

of the Engineers Council for Professional Development.

BENJAMIN K. SILVERMAN, M.D., Division of Chronic Illness Control, New Jersey State Health Department, has been named coordinator of the heart disease control program.

WILSON G. SMILLIE, M.D., Dr.P.H.,* recently retired professor of public health and preventive medicine, Cornell University Medical College, has been appointed executive director, New York State Charities Aid Association, New York City, succeeding HARRY S. MUSTARD, M.D.,* retired.

ALBERT W. SNOKE, M.D.,* director, New Haven Community Hospital and professor of public health (hospital administration), Yale University, New Haven, Conn., has been chosen president-elect, American Hospital Association.

VINCENT DU VIGNEAUD, Ph.D., professor of biochemistry, Cornell University Medical College, New York City, who was a recipient of an APHA Lasker Award for research in 1948, has received the 1955 Chandler Medal of Columbia University in recognition of his analytical studies. The Chandler Medal was named in honor of Professor C. F. Chandler of Columbia University, one of the founders of the American Public Health Association in 1872.

ROBERT B. WOODWARD, Ph.D., Morris Loeb professor of chemistry, Harvard University, Cambridge, Mass., has been awarded the 1956 William H. Nichols Medal of the New York Section, American Chemical Society, for a leading part in the synthesis of quinine, cortisone, and lysergic acid—a drug used in studying mental disease. The gold medal will be presented at a special dinner of the section on March 16.

DEATHS

ROBERT H. BISHOP, JR., M.D.,† director, Joint Committee for Advancement of Medical Education and Research, Western Reserve University and Affiliated Hospital, Cleveland, Ohio, on September 29 (Medical Care Section).

LUTHER M. BOYERS, M.D.,* in private practice, Berkeley, Calif., on September 19 (Unaffiliated).

ALBERT J. CHESLEY, M.D.,* secretary and executive officer, Minnesota State Board of Health, St. Paul, and past-president of the American Public Health Association, on October 17 (Health Officers Section).

FRANCIS J. CONAHAN, M.D.,† city physician, City Health Department, Bethlehem, Pa. (Health Officers Section).

H. SHIRLEY DWYER, D.D.S.,* director, Dental Hygiene Division, Arkansas State Department of Health, Little Rock, on October 20 (Dental Health Section).

OLE J. HENDRICKSON,† sanitary inspector, California State Department of Public Health, on August 21 (Engineering and Sanitation Section).

ALBERT D. KAISER, M.D.,* health officer, Rochester, N. Y., on November 1 (School Health Section).

THOMAS T. MACKIE, M.D.,† internationally known authority on tropical diseases, October 5 (Public Health Education Section).

HOWARD M. MARJERISON, D.M.D.,† director, Forsyth Dental Infirmary for Children, Boston, Mass., September 4 (Dental Health Section).

SAMUEL B. MARKS, M.D.,† director of health, City of Lexington and Fayette County, Ky. (Health Officers Section).

CARL M. PETERSON, M.D.,* secretary of the Industrial Health Committee of the American Medical Association, September 27 (Occupational Health Section).

HAROLD R. SANDSTEAD, M.D.,* medical director, Laboratory of Biochemistry and Nutrition, National Institutes of Health, PHS, Bethesda, Md., in a Colorado plane accident (Food and Nutrition Section).

DONALD W. TRIPODI, M.D., M.P.H.,† ward physician, pulmonary tuberculosis, Veterans Administration Hospital, Excelsior Springs, Mo. (Health Officers Section).

CONFERENCES AND DATES

Meetings Coming in December, 1955, January and February, 1956:

American Academy of Occupational Medicine. Cincinnati, Ohio. February 15–17.

American Mosquito Control Association. Edson Hotel, Beaumont, Tex. February 5–8.

Community Chests and Councils of Ameria. Biennial Conference. Detroit, Mich. February 5–10.

Council of National Organizations of the Adult Education Association of the U.S.A. Atlantic City, N. J. December 12–13.

National Social Welfare Assembly. New York, N. Y. December 8–9.

Pan American Congress of Ophthalmology (Fifth). Santiago, Chile. January 9–14.

* Fellow.
† Member.

The American Public Health Association acknowledges with deep appreciation its indebtedness to these Sustaining Members whose annual dues help support its general program

Sustaining Members

Amalgamated Laundry Workers Health Center, Inc., New York, N. Y.
American Aerovap, Inc., New York, N. Y.
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American Can Company, New York, N. Y.
Association for the Aid of Crippled Children, New York, N. Y.
George Baehr, M.D., New York, N. Y.
Borden Company, New York, N. Y.
Chlorine Institute, Inc., New York, N. Y.
Congress of Industrial Organizations, Washington, D. C.
Difco Laboratories, Detroit, Mich.
Diversey Corporation, Chicago, Ill.
Equitable Life Assurance Society of the United States, New York, N. Y.
Grand Concourse Medical Group, New York, N. Y.
John Hancock Mutual Life Insurance Company, Boston, Mass.
Hellige, Inc., Garden City, N. Y.
Hoffmann-La Roche, Inc., Nutley, N. J.
International Association of Ice Cream Manufacturers, Washington, D. C.
International Association of Machinists, Washington, D. C.
International Equipment Company, Boston, Mass.
Lederle Laboratories Division, American Cyanamid Co., New York, N. Y.
Liberty Mutual Insurance Companies, Boston, Mass.
Licensed Beverage Industries, Inc., New York, N. Y.
Life Insurance Company of Virginia, Richmond, Va.
Lily-Tulip Cup Corporation, New York, N. Y.
Merck & Company, Inc., Rahway, N. J.
M & R Laboratories, Columbus, Ohio
Metropolitan Life Insurance Company, New York, N. Y.
Montefiore Hospital Medical Group, New York, N. Y.
National Dairy Products Corporation, New York, N. Y.
New York Hotel Trades Council and Hotel Association Health Center, Inc., New York, N. Y.
Oval Wood Dish Corp., Tupper Lake, N. Y.
Prudential Insurance Company of America, Newark, N. J.
Rip Van Winkle Clinic, Hudson, N. Y.
Ross-Loos Medical Group, Los Angeles, Calif.
Sealright Company, Inc., Fulton, N. Y.
Sharp and Dohme, Inc., Glenolden, Pa.
Sidney Hillman Health Center, New York, N. Y.
E. R. Squibb and Sons, New York, N. Y.
Steiner Sales Company, Chicago, Ill.
Sun Life Insurance Company, Baltimore, Md.
Theatre, and Amusement Building Janitors' Union, Chicago Office, Chicago, Ill.
Travelers Insurance Company, Hartford, Conn.
UAW-CIO (United Automobile, Aircraft and Agricultural Implement Workers of America), Detroit, Mich.
Union Central Life Insurance Company, Cincinnati, Ohio
Upjohn Company, Kalamazoo, Mich.
Velsicol Corporation, Chicago, Ill.
Winthrop-Stearns, Inc., New York, N. Y.
Wyeth Laboratories, Inc., Philadelphia, Pa.

A New Publication of the

American Public Health Association

HEALTH SUPERVISION OF YOUNG CHILDREN

A Guide for Practicing Physicians and Child Health Conference Personnel

Prepared and authorized for publication by the Committee on Child Health, American Public Health Association. Endorsed by the American Academy of Pediatrics, the U. S. Children's Bureau, and the National League for Nursing.

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The guide is divided into two parts. Part I tells what health supervision is, wherever it is carried on, and is for all physicians, nurses and other professional persons responsible for the health of children. Part II shows how health supervision is carried out in the child health conference. This part will be of special interest to all personnel of child health conferences.

"Health Supervision of Young Children" has been developed with the active participation of many prominent professional workers in medicine, public health, and child welfare. It is a project of the APHA's Committee on Child Health, Samuel M. Wishik, M.D., chairman, in association with review committees of the American Academy of Pediatrics and the Children's Bureau. The material was written by Nina Ridenour, Ph.D.

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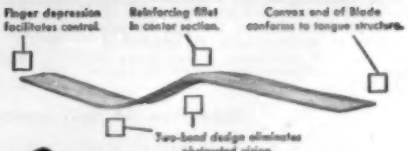
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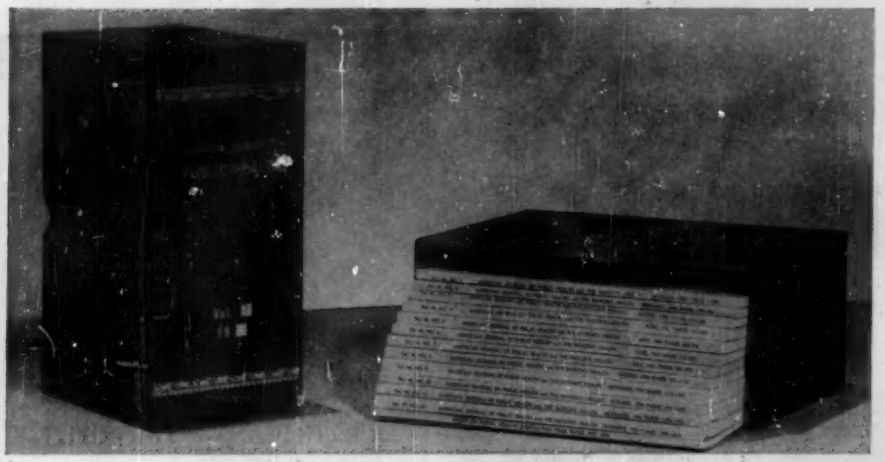

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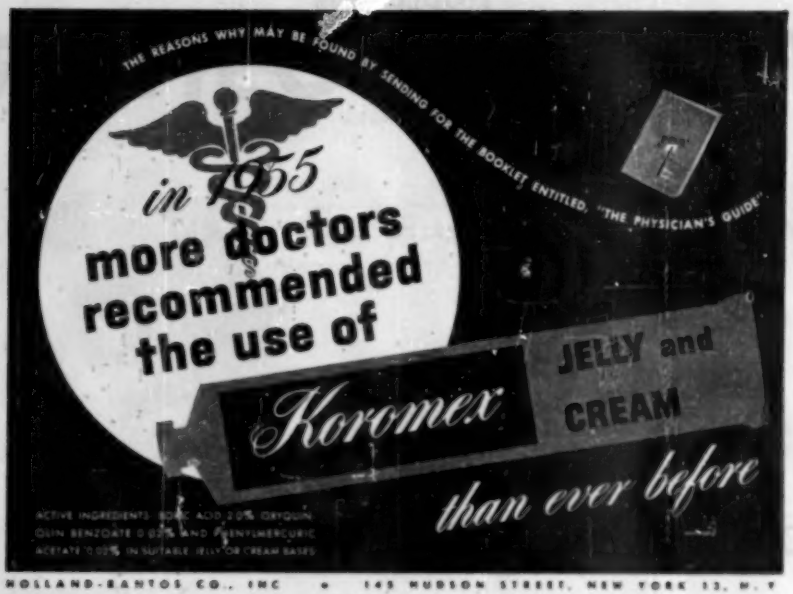
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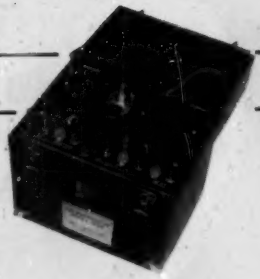

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2. McLester, J.S., and Darby, W.J.: Nutrition and Diet in Health and Disease, ed. 5, Philadelphia, W.B. Saunders Company, 1952, p. 241.

3. Marrack, J.R.: Food and Planning, London, Victor Gollancz, Ltd., 1945, p. 67.

4. Wolgamot, I.H., and Fischer, L.J.: Pork Facts for Consumer Education, Washington, D.C., United States Department of Agriculture, AIB No. 109, 1954.

5. Watt, B.K., and Merrill, A.L.: Composition of Foods—Raw, Processed, Prepared, Washington, D.C., United States Department of Agriculture, Agricultural Handbook No. 8, 1950.

6. Bowes, A. deP., and Church, C.F.: Food Values of Portions Commonly Used, ed. 7, Philadelphia, Anne deP. Bowes, 1951.

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Pork Chops, without bone, 3 oz., cooked[5]	25.0%	17.3%	13.3%	47.3%	10.0%	28.7%	10.5%
Pork Sausage, 3 oz., cooked[6]	17.3%	14.0%	9.2%	27.7%	10.1%	18.5%	14.7%
LACTATION							
Ham, without bone, 3 oz., cooked[5]	20.0%	17.3%	10.1%	30.0%	8.0%	26.7%	10.2%
Pork Chops, without bone, 3 oz., cooked[5]	20.0%	17.3%	10.0%	47.3%	8.0%	28.7%	8.6%
Pork Sausage, 3 oz., cooked[6]	13.8%	14.0%	6.9%	27.7%	8.1%	18.5%	12.0%

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The nutritional statements made in this advertisement have been reviewed and found consistent with current medical opinion by the Council on Foods and Nutrition of the American Medical Association.

American Meat Institute

Main Office, Chicago... Members Throughout the United States

DIFCO

Diagnostic Reagents
for the Determination of

ANTISTREPTOLYSIN TITERS

Bacto-Streptolysin O Reagent is a standardized reagent recommended as an aid in the diagnosis of Rheumatic Fever, Glomerulonephritis and other diseases associated with Group A streptococcal infections.

SENSITIVITY TESTS

The significance of determining bacterial sensitivity is accentuated by the discovery of increasing numbers of antibiotics, sulfonamides, and other chemotherapeutic agents and the development of resistant organisms to one or more of these compounds. Sensitivity or resistance is easily determined with Bacto-Sensitivity Disks.

HETEROPHILE ANTIBODIES

The differential diagnosis of Infectious Mononucleosis requires the use of standardized heterophile reagents:

Bacto-Guinea Pig Kidney Antigen, Desiccated and Suspension
Bacto-Beef Cell Antigen, Desiccated and Suspension

BLOOD COAGULATION

Prothrombin determinations require accurately prepared interstandardized reagents:

Bacto-Thromboplastin
Bacto-Prothrombin 2 Stage Reagent
Bacto-Prothrombin Free Beef Plasma
Bacto-Prothrombin Free Rabbit Plasma
Bacto-AC Globulin
Bacto-Sodium Chloride 0.85 Per Cent
Bacto-Sodium Oxalate Solution 0.1 Molar
Bacto-Calcium Chloride Solution 0.02 Molar

LIVER DISEASE

Differential diagnosis of hepatic disturbances is aided by standardized reagents:

Bacto-Cephalin Cholesterol Antigen
Bacto-Thymol Turbidity Reagent
Bacto-Kingsbury Turbidity Standards
Bacto-Thromboplastin and other Prothrombin Reagents

RENAL FUNCTION

Phenolsulfonphthalein Ampules, Difco is a carefully prepared injectable recommended for use in determining renal excretion rate.

HEMAGGLUTINATION OF RED BLOOD CELLS

Accurately determined by the use of:

Bacto-Trypsin 1% for Hemagglutination
Bacto-Hemagglutination Buffer
Trypsin, Difco, 1:250
Bacto-Bovine Albumin 30%
Bacto-Phytohemagglutinin

DIFCO LABORATORIES

DETROIT 1, MICHIGAN